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ABSTRACT

This survey assembles information on the developments and trends in inservice teacher training in Asia, identifies the growing points of innovative approaches for improving inservice teacher preparation, and identifies ways that further education of teachers is linked to programs of curriculum development and the introduction of new teaching methods in schools. Questionnaires were sent all member states in Asia, and those from which responses were received were visited by the professional staff members of the Asian Institute of Teacher Educators to collect supplementary data. An introductory section of the document discusses the background of the education systems in Asia, then stages of development, institutional framework, types of inservice programs, innovations in inservice programs, and some common problems. Further reports on inservice teacher education in Afghanistan, Burma, India, Indonesia, Iran, Japan, Republic of Korea, Malaysia, Nepal, Pakistan, Philippines, Singapore, Sri Lanka, and Thailand are provided. A bibliography with materials grouped according to country is included. (PD)

ED 098197

FURTHER EDUCATION OF TEACHERS IN SERVICE IN ASIA: A REGIONAL SURVEY

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"Conditions in which teachers are trained should be profoundly changed so that, essentially, [the teachers] become educators rather than specialists in transmitting pre-established curricula; the principle of a first, accelerated training stage, followed by in-service training cycles, should be adopted."

LEARNING TO BE. The World of Education today and tomorrow. Report of the International Commission on the Development of Education.

PREFACE

The present survey of "Further Education of Teachers in Service in Asia" was undertaken, as a part of Unesco Programme for 1971-1972, by the Asian Institute for Teacher Educators, Quezon City,* in collaboration with the Unesco Regional Office for Education in Asia (Bangkok).

The main purpose of the Survey was to assemble information on the developments and trends in further education of teachers through in-service training in the Asian region, and to identify the growing points of innovative approaches for improving the preparation of teachers in service. Attention was to be given notably to identifying in what ways further education of teachers was linked in the countries of the region to programmes of curriculum development and the introduction of new teaching methods in schools. The Survey was limited to teachers in service in primary and general secondary schools.

A questionnaire was sent to all Member States in Asia, and those from which responses were received were visited by the professional staff members of the Asian Institute of Teacher Educators in order to collect supplementary data and obtain clarifications through personal discussion. The country reports presented in this Survey therefore cover only those Member States for which material and data

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* On completion of a ten-year assignment in December 1972, the Institute has now assumed new functions and responsibilities as a National Centre of Research and Development in Teacher Education in the Philippines.

could be collected through responses to the questionnaire and staff visits.

The Survey was made possible by the generous co-operation of the Ministries of Education and the National Commissions for Co-operation with Unesco of the Asian Member States who provided the data and materials for the Survey, and of the Asian Institute for Teacher Educators which assembled and analyzed the materials. Their contributions are gratefully acknowledged.

A survey of this kind will clearly require periodic revision to keep pace with the rapid developments that are taking place in the Asian Member States and to fill in the gaps in information. The Regional Office will welcome additional information as well as suggestions for improvement or for correcting any errors of omission or commission.

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INTRODUCTION

Background

The education systems of the countries in the Asian region vary, in their structure, in their administrative framework, their size as well as in their stage of development. Although, for reasons explained in the Preface, the country reports in this Survey do not cover all the Member States in the region, they nonetheless present a spectrum of situations which represent some of the variety that characterises the Asian scene as well as the elements of the problems which the countries have in common.

In any education system, the teacher still is the most important factor in the education process. The quality of an education system is determined, in the final analysis, by the stock of knowledge, skills and insights that the teaching force has. The evolution of an education system, over a period of time, may be appraised, in one of its aspects, in terms of the increase in this stock and of the rate at which the stock is growing. Two methods have generally been adopted to raise the level of knowledge, skills and insights: a progressive rise in the standards of academic and professional preparation required of the new entrants to the teaching force; and the provision of opportunities for those already in service to improve their knowledge and skills. While the pre-service preparation of prospective teachers has been a part of the education systems in Asia since their early beginnings, in-service education is of relatively recent origin. The increased emphasis that in-service education is now receiving is to be found in conjunction with the accelerating pace of change in the schools. In-service education is beginning to be recognized as a critically important element in any strategy of educational reform and improvement. As pointed out in the Working Document of the Third Regional Conference of Ministers of Education of Asian Member States (Singapore, 31 May-7 June 1971):

"As long as education is needed and knowledge about education and children continues to increase, the teacher has

always something new to learn. Learning to teach is a lifelong pursuit and a teacher's education is a continuing education; otherwise it is no more than certification".[1]

Stages of development

In-service education comprehends a wide range of activities. At one end of the scale are programmes designed for teachers whose academic or professional qualifications at the time of recruitment were below the prescribed standards. At the other end are a variety of programmes by which teachers, otherwise qualified, can extend their personal and professional education and gain new insights into educational principles and practices. The term "further education" could be applied to distinguish the activities at the latter end of the spectrum if it were not for the considerable overlap and convergence which are inevitably to be found in all in-service education programmes, particularly in the developing countries.

The purposes of in-service education are however profoundly affected by the stage of development of the education system. Viewed historically, certain broad patterns are discernible - even though the lines of demarcation cannot be clearly drawn - through which in-service education programmes seem to have evolved in the countries of the Asian region.

1. The first stage is the beginning of an education system in which the output of that system is not enough to provide enough teachers to maintain it. Teachers with the minimum qualification which the system can provide are recruited. The qualification-structure of the teaching force thus constituted carries over even when the system is developed sufficiently to supply its own needs. In-service programmes at this stage are intended to raise the basic qualifications of the existing teaching force. They take the form of institutional training and are limited in their scope to general academic education.

2. When the education system is sufficiently developed to meet its own demand, the qualification standards for

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1. "*Growth and Change: Perspectives of education in Asia*", Educational Studies and documents, No.7, Unesco, 1972.

prospective teachers are prescribed, and progressively raised, both in terms of the requirements for general education and professional training. (Where there is still imbalance between the demand and the supply, the requirements of professional training are relaxed). In-service education programmes at this stage centre on filling the gaps created by the progressive raising of qualification standards and tend to be strongly linked to certificates and degrees.

3. When the qualification standards have been stabilized, in-service programmes become diversified and become "further education". Diversification extends to all aspects of in-service education: there are long courses leading to higher degrees as well as short week-end or vacation courses. New institutional networks grow up to meet the diversified needs and in-service education is no longer a deferred replication of pre-service training.

The methods or means used in in-service education do not seem to change the nature of the programmes. Mass media or correspondence techniques or programmed materials may be used at any of the stages. They do not necessarily convert a certification programme into a "further education" programme. The one element which, on the evidence of some of the country reports in this Survey, changes the character of in-service education is a fundamental reorientation of any important component of the education system. The curriculum development movement, notably in science and mathematics, which is underway in some of the countries of the region illustrates the point. Proposals for fundamental reform which are to be carried out in the classrooms must take a long time to be fully effective if they are diffused only through pre-service education of prospective teachers. It is the in-service education programmes which provide the critical point of entry. Typically the institutional base for such programmes is much more widespread and includes not only training institutions but also the schools. The range of activities undertaken as well as the methods used in training are more diversified.

Institutional framework

In all of the countries whose programmes are presented in this Survey, the Ministry of Education has a department/division responsible for teacher education. The organizational arrangements for in-service education vary, however: in many countries, the department/division of teacher education has a unit with specific responsibility for in-service education programmes; in others, the department concerned with a particular level or type of education (primary, secondary, technical etc.) is also responsible for the related in-service education programmes. In countries with a federal structure of government (e.g. India, Pakistan) the organizational machinery is located at the State/provincial level.

The role of the central ministry/department in in-service education programmes varies from country to country. In a few countries, the central organ is the principal planning and organizing authority, with teacher training institutions as the implementing agencies. The trend in most countries (for example Indonesia, Iran, Japan, Philippines) is to decentralize the planning and organizing functions to special institutions or local bodies, while the central organ is responsible for co-ordination and financing and, in cases where certificates or diplomas are involved, prescribing the standards.

In-service education programmes comprehend a large range of activities and there is a corresponding variety in the types of institutions which carry out these programmes. Typically, teacher training institutions and colleges of education are quite extensively involved, and in a more limited way the universities. This is particularly so where the in-service education programmes lead to a certificate/diploma of education or a higher degree. But as the in-service education activities increase in range and variety, the established programmes and staffing patterns of teacher training institutions no longer suffice, and new institutional forms are emerging, especially for programmes other than those intended to lead to regular diplomas or degrees.

In some countries (e.g. Afghanistan), special units for in-service programmes are established in the teacher training

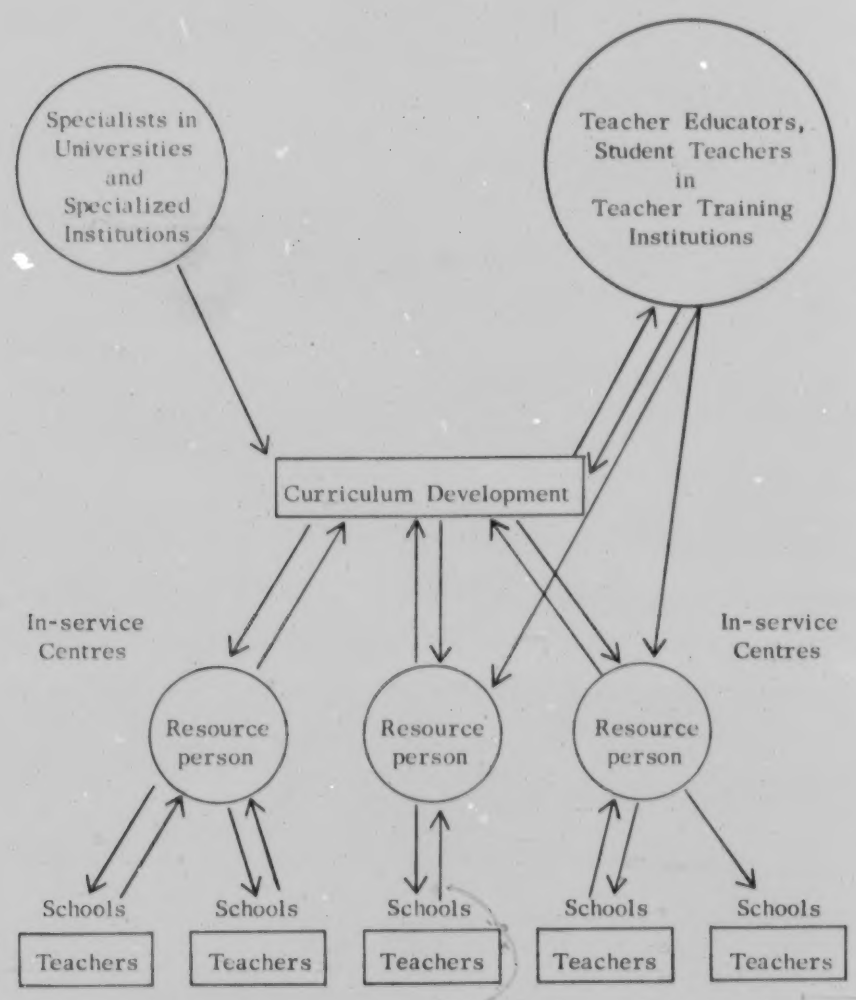
institutions. In most countries, there is a marked trend towards evolving a complementary, but separate, institutional arrangement in order to ensure a higher degree of concentration of specialized resources, greater flexibility in programme scheduling and closer linkages, on the one hand, with research and development and, on the other hand, with the schools. For example, in India, the National Council of Educational Research and Training at the federal level, and the State Institutes of Education and the Extension Centres at the State level have a leading role in in-service education. In Iran, the regional councils have major responsibility for in-service education while research and development institutions are also closely involved; e.g., the Institute of Research and Programming Science and Education, the School Textbooks Organization, the Centre for Education Publications and the Research and Curriculum Development Centre. In Republic of Korea, the institutional machinery is even more extensive, with a research institute (which also undertakes in-service education programmes) in each provincial Board of Education, in-service training institutes attached to selected junior teachers' colleges and colleges of education, and with national institutes for specialized areas of education (such as educational administration). In Japan, there are special institutions at the national level (e.g., the National Education Centre, the National Institute for Educational Research) and Prefectural Education Centres in each prefecture. In Pakistan, the Institutes of Education and Research and the Education Extension Centres and In-service Training Centres, and in the Philippines the regional in-service education centres have a major role in in-service education programmes.

A common criticism about the teacher training institutions in the developing countries of Asia is directed to their "isolation" from the real problems of the schools. Their contacts with the schools, it is averred, are limited to the practising or demonstration schools and their programmes therefore do not reflect adequate understanding of the larger context in which the schools and their teachers function. In a few countries of the region, there is now in evidence a growing trend to use the schools also in the in-service education

programmes. For example in India, there is an attempt to develop "College-school complex", with a College of Education linked to a number of schools in its neighbourhood; and in Republic of Korea and Pakistan a number of schools have been selected as Experimental Schools (Republic of Korea) or Pilot Schools (Pakistan) which also serve as important venues for in-service education programmes. Another welcome trend is toward mobilizing to a greater degree the educational resources which are generated by an education system itself - the experiences of its leading teachers and schools. In Burma, for example, each school has a Curriculum Development Committee which enables teachers to learn from each other's experiences; and every region, comprising a number of school areas, has its own Curriculum Development Committee which brings together the experiences of a larger number of schools. In India "the Seminar Readings" programme; in Indonesia, the Textbooks Writing Teams; in Malaysia, the special journals; in Nepal and Sri Lanka, the Study Groups/Circles - all aim at using the internal resources of the education system.

What appears to be the most significant form of institutional organization for further education of teachers has arisen from new programmes in curriculum development, notably in science and mathematics, and, to a lesser extent, in language arts. Almost all countries have reported such programmes. Although the approaches vary from country to country, there are significant similarities. Typically, the central core of the programme is a project in which new curricula and materials are developed and tested in selected schools. The in-service education activities are initiated to prepare teachers in the new content, methods and materials: these activities are carried out directly or through special in-service training centres into the schools. Concurrently the programmes for the pre-service preparation of teachers are redesigned in order to ensure that future entrants to the teaching force have the necessary knowledge and skill. In countries where these "project-centred" programmes have been in operation over a period of time (e.g., India, Sri Lanka, Philippines) the institutional organization has also become a focal point for

co-ordinating the development of materials and the training in their use and further development. This institutional organization may be diagrammatically represented as follows.



Types of in-service education programmes

The reports in the Survey show the considerable range of activities which in-service education programmes comprehend in the countries of the region. As these programmes grow, they become more diversified, in the types of activities, in the methods used and the teacher groups served. Indeed, the generalization may not be unwarranted that, the greater the diversification, the more important becomes the contribution of in-service education in the total school system. This is no more than to recognize that neither the teacher nor other personnel in the school system have a single, undifferentiated role. Both the system and the personnel in it have differential tasks to perform, for which a variety of preparatory programmes are needed.

For facility of comparison, the in-service education activities reported in the Survey may be grouped in the categories suggested in the Working Paper [2] of the Third Regional Conference of Ministers of Education of Asian Member States (Singapore) referred-to earlier.

1. Remedial programmes intended to correct the deficiencies of the initial pre-service preparation or to build on the introductory experiences given in pre-service preparation:

In most of the developing countries in Asia, a major share of in-service education activities is devoted to 'remedial' programmes. This is mainly because in the past teachers with inadequate general education had to be recruited and there were not enough opportunities for pre-service professional training. The different levels of qualification with which the teachers entered the teaching cadres are reflected in the multiplicity of salary grades. The 'remedial' programmes are therefore intended to provide both general education and professional training. Now the education systems in almost all countries of the region are sufficiently developed to ensure the supply of prospective teachers for the schools at

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2. *"Growth and Change: perspectives of education in Asia"*, ibid. (pp. 49-50).

progressively rising levels of basic education. 'Remedial' programmes to provide the minimum basic education are expected to be less frequent in future, thus releasing resources for other types of in-service education activities. In a number of countries, however, the problem of pre-service professional training remains. In some countries, the level at which pre-service training is given has been raised (Republic of Korea, Philippines, Republic of Viet-Nam); in other countries, the demand of the expanding education system is of such magnitude that there is constant pressure to increase the output of the training system by shortening the period of training. In this situation, in-service education programmes might be expected to continue as 'remedial' programmes in professional training. Clearly the need is not so much to provide 'remedial' programmes but to articulate pre-service and in-service education more closely so that in-service education becomes a continuation of the pre-service programme. This would call for a reconsideration of the dominant role that certification and diplomas seem to have in the professional training of teachers, and a recognition of the school, where teaching and learning take place, as an important adjunct to the training system. In a few countries, innovative efforts (which are referred-to in a subsequent section) are underway in order to narrow the existing cleavage between pre-service and in-service education of teachers.

In some countries, the teacher training system tends to be highly specialized not only by levels but by stages of education - primary grades, middle grades, high school and higher secondary. The mobility of teachers from one stage to another is limited and can be achieved only by their obtaining the appropriate certificate or diploma through in-service education programmes. Burma reports an interesting variant: for teaching in the middle grades, only teachers of primary grades are recruited and given in-service training to qualify.

2. Upgrading programmes intended to keep teachers abreast of new advances in knowledge:

Next to 'remedial' programmes, the largest number of activities reported in the Survey are concerned with upgrading

programmes. The programme most common is one of providing opportunities to the teachers in service to take regular higher degrees in education or in a substantive discipline. In most countries, special regulations have been promulgated to enable teachers through release time and other ways to take higher degrees. Higher degrees in education can be taken through vacation courses (Afghanistan, India, Malaysia, Pakistan, Thailand) and through correspondence courses (Burma, India, Japan, Sri Lanka), apart from regular institutional attendance. Japan has an 'open door' policy for teachers to take higher degrees, and supplements the opportunities for this purpose with an extensive programme of instruction by correspondence, radio and TV, for degree work in substantive disciplines as well as in education.

For subject specialist teachers to refresh and extend their knowledge of their special subjects, short and intensive courses - workshops, seminars, summer institutes, evening classes - are in increasing use and have been reported by almost all countries covered in the Survey. Science, mathematics and language arts seem to receive major attention in these programmes. Surprisingly, only in a few countries is there any evidence of the universities' participating in these activities in a substantial way.

Another area of need which upgrading programmes should meet is to prepare a subject specialist teacher to teach one or more subsidiary subjects in which he may not be fully qualified. This is essential to enable the school to respond to new curriculum developments, otherwise the curriculum will remain shackled to existing specializations. The reports in the Survey would indicate that this area of need, of particular importance in the developing education systems, has not so far received adequate attention in the in-service education programmes.

3. Programmes for special needs intended to provide training opportunities which are designed for the special needs not covered adequately in pre-service programmes:

Programmes of special needs are concerned with the preparation of teachers for tasks such as education in rural

areas, education of special population groups (for example tribal or nomadic people), teaching in multi-lingual school programmes - and for tasks which call for skills which are best developed on the basis of some experience in teaching, such as career guidance and counselling, librarianship, or action-research studies.

Most of the developing countries in Asia are predominantly rural in the composition of population and the structure of the economy. The teacher in a rural area has special tasks and responsibilities, both in the school and in the community, for which he cannot be adequately prepared by pre-service professional training alone. More than others, he suffers from professional and intellectual isolation. There are not many references in the country reports to in-service education programmes specially designed to meet the particular needs of rural teachers or teachers of special population groups. Notable exceptions are the reports from Iran and the rural teacher programme in Thailand. The Education Corps in Iran serves the rural areas. The training of the Corpsmen is made up of a period of initial orientation to the problems of rural areas and a long spell of work in the field, followed by a regular course of professional education and continuing in-service education through a specialized institution.

A larger number of countries report in-service education programmes in special areas such as career guidance and counselling (India, Iran, Malaysia, Philippines) and action-research studies (India, Republic of Korea, Japan).

4. Curriculum development programmes intended to train teachers to handle new curricula and methods or acquire skills and pedagogical knowledge required for new teaching roles:

Development programmes include not only curriculum projects but also developments in national education policies which affect the schools and their teachers in a radical way. By far the most significant developments in the further education of teachers in the Asian countries are being set in motion by reform-oriented national education policies and by the

movement for the reorganization of curricula. In recent years, a number of countries have introduced far-reaching changes in their education systems which affect the structure, the objectives and the content (Iran, Nepal, Pakistan, India, Philippines, Indonesia, Sri Lanka). How effectively these reforms are implemented would depend, in a major way, on how the teachers already in service are prepared for them. The reports of Iran and Sri Lanka are illustrative of the extensive in-service education programmes which have been generated by the reforms.

Curriculum development programmes, encompassing both reorganization of content and development of materials, are of recent origin and their initiation, reported by most countries in the region, has been a potent force in activating further education activities in a systematic and planned way. In some countries (India, Pakistan, Sri Lanka) curriculum development the programme is becoming the focal point of in-service education. While initially these programmes were centred on science and mathematics, the trend now is to make them more comprehensive. Plans are underway to establish appropriate institutional structures of such comprehensive curriculum development programmes in Pakistan, Malaysia, Thailand and Philippines. These developments are bound to influence the nature and scope of further education in the coming years.

5. Instructional leadership programmes designed for those who will fill positions of leadership:

Some of the key positions in the instructional and training systems are filled by teachers on promotion - heads of schools, heads of departments, and supervisors, both general and special subjects supervisors. The responsibilities of these personnel are both managerial and instructional. They provide leadership to the teaching staff and co-ordinate their contributions to the best advantage of the schools. They also form one of the principal sources for recruitment to positions of higher responsibilities in the Ministries and in the institutions for the professional training of teachers. The right kind of training for these key personnel to help them in the larger, and different, responsibilities they assume when they

pass on from the classroom to headship or supervision, is of great importance. This is especially so in the rapidly expanding school systems in the developing countries which have to draw upon relatively less-experienced teachers to fill these key posts.

The reports in the Survey indicate that this important area of need is beginning to receive attention. Indonesia, Iran, Pakistan, Singapore, and Sri Lanka report in-service programmes for these categories of personnel. India has recently established a National College for Educational Administrators, Republic of Korea has a Central Institute for Educational Administration which provides in-service programmes for leadership training and also an Institute for the Study of Education Administration. In Japan further education opportunities are systematically provided both by professional Boards of Education and, at the national level, by the National Education Centre.

Innovations in in-service education programmes

Although the bulk of in-service education programmes in most of the countries are of 'remedial' kind and tied to established certificates and diplomas, there is nevertheless discernible a considerable range of innovative approaches in the way the countries are trying to deal with problems whose intrinsic difficulties are compounded by the magnitude of numbers involved. Most of these innovative approaches are concerned with the different ways in which regular institutional courses may be taken by teachers while in service. Two important elements in these approaches give them an innovative aspect. First is the recognition that opportunities for learning should be adjusted to the learner's (in this case the teacher in service) needs; the second is the recognition that experience of teaching is in itself a resource for further learning.

Almost all countries reported in the Survey have these organizational innovations - for example: Afghanistan, combination of self-learning and institutional training; Burma,

evening and part-time study; India, work-and-study in the schools combined with institutional training; Iran, the Education Corps training programme; Malaysia, week-end courses; Nepal, introduction of pedagogy in the general education programmes; Pakistan, mobile teams; Sri Lanka, vacation institutes.

Demonstration for the purpose of in-service education is being used in a few countries in an effective way. For example in Indonesia, eight Development Schools which have been established to exemplify a new structure, curriculum content and teaching methods are also being used as demonstration centres; in Pakistan, the Pilot Schools are also a base of in-service activities; and in the Philippines pilot elementary schools and secondary schools are attached to the Regional In-service Education Centres.

The participation of teachers in service in developing new curriculum or teaching programmes has proved itself as one of the most effective forms of in-service education. A few countries have adopted this approach as a basic element in their curriculum development programmes, and their experiences will be found of great interest. In Burma, for example, there are the Curriculum Development Committees in each school and each region; in Nepal, the PRIEME and the STEP programmes; in Indonesia, the participation of teachers in writing textbooks; in Singapore, the participation of teachers in primary school curriculum; and in Sri Lanka the development of 'instructional modules' for the new programme of occupational education.

The use of new techniques in in-service education programmes has been within limited range in the developing Asian countries. The most commonly used of these techniques in Asia is correspondence instruction (which is also oldest of the 'new' techniques). Correspondence instruction in one form or another is used on quite an extensive scale in Burma (for Boards of Education); in India (for general education degree as well as professional training); in Indonesia (for upgrading of teachers' qualification); in Iran (for training

of teachers for rural areas); in Pakistan; and in Sri Lanka. Correspondence instruction however has not yet been combined in these countries with other techniques or media - for example, programmed texts or radio/TV. In Japan, correspondence instruction in combination with radio broadcasts has been developed extensively and systematic experiments are underway in the use of educational technology.

In a few countries, a beginning has been made in preparing teachers and school administrators in the use of mass media and other techniques in education. In Iran, the Institute of Educational Research is currently planning to establish a centre to develop the techniques of microteaching in teacher education, and training courses and demonstrations are organized in the use of mass media in education. In Republic of Korea, there are regular in-service courses and demonstrations of new teaching methods and techniques, and in Malaysia, in-service training for teachers in the use of ETV and radio have been started and a comprehensive nationwide programme of educational TV and radio is getting underway. Pakistan is experimenting with programmed instruction, and the Philippines is using radio for in-service training of teachers of English. Singapore has started training teachers in the mass media, especially ETV, and utilizes closed circuit TV (CCTV) for the purpose. CCTV is also used in giving 'utilization courses' for teachers, with recorded, videotape, full courses in five subject areas. In Japan apart from radio/ETV which are extensively developed, there are now nine centres of educational technology, located in the universities or colleges of education, and the Ministry of Education supports pilot projects in elementary and secondary schools to try out new methods and technologies. These initiatives in different countries of the region show that new techniques, particularly mass media, are bound to assume an important role in the coming years in teacher education.

Some common problems

In-service education of teachers by which they are given opportunities to continue to develop their personal education

and their professional competence is of relatively recent origin in the developing countries of Asia. But it is growing rapidly, beyond its early beginnings toward the stage of further and continuing education. Increasingly, the recognition is gaining ground that further education and training of those who are already in service is highly important if proposals for the improvement or reform of education are to be fully effective.

As the Survey helps to show, there are certain problems which the developing countries in the region seem to have in common. With the growth of in-service education programmes, there is obviously a need to plan and co-ordinate these programmes at the national level for greater effectiveness. The apparent weaknesses in the present arrangements in most countries stem from a lack of systematic planning based on well-conceived scale of priorities, and directed to the use of existing institutional and other resources without unnecessary duplication of effort. Clearly identifiable budgetary support for in-service education is essential for developing a systematic plan.

In most countries, the institutional support for in-service education programmes appears to be inadequate. In-service education must necessarily draw on the resources of a variety of institutions - universities, teacher training and specialized institutions, departmental agencies, schools, professional organizations of teachers, Parent-Teacher Associations etc. It is an important function of planning to define the contributions that the various institutions can reasonably be expected to make to a co-ordinated programme of further education of teachers. Also the in-service education programmes have to be conducted at different levels of the administrative system - national, regional, local and school. These considerations call for a 'network' arrangement which will ensure that apart from existing institutions (which need to be appropriately strengthened to assume the additional responsibility of in-service education) there will be other more widely dispersed centres which can reach out to the teachers and their schools not served by existing institutions.

One of the urgent problems in developing in-service education programmes is the availability of resource persons and resource institutions. The diversified range of in-service education activities calls for a corresponding variety of expertise to support the programmes. This is particularly so when the programmes aim at disseminating new curriculum content or methods and techniques. Furthermore, if in-service education and training are to serve as an instrument in the reorganization and reform of education, they must be able to draw continuously upon the new insights and experiences which the deeper study and research in education unfold. The wide gaps which are evident in the in-service education programmes relate to areas in which resource persons and resource institutions have not yet been built up on an adequate scale: education in rural areas, training for instructional leadership, and evaluation of in-service education programmes and their methods.

AFGHANISTAN

General background

For a time, the main teacher training course in Afghanistan at the primary level was a three-year training course at Grades X, XI and XII of the lycee (secondary school) or in one of the 8 DMA's * - the teacher training colleges established at Kabul, Charikar, Gardez, Kunduz, Herat, Jalalabad, Kandahar and Mazar-i-Sharif besides the Academy for Teacher Educators, Kabul. This training was supplemented by an emergency training scheme from 1962-70 which provided a three-year course in general education at Grades VII, VIII and IX and a one-year professional training at Grade X. In 1969 these were replaced by a one-year professional course of teacher training at the post-secondary level; i.e., after 12 years of schooling; 13th grade training was started in Kandahar DMA. In 1970 it was first extended to Kabul DMA, the DMA which is part of the Academy for Educators, Kabul, and the DMA at Jalalabad and in 1971 to DMA's at Charikar and Herat. It is envisaged that, gradually, qualified teachers would be produced for all primary schools through this one-year professional course.

Middle school teachers were trained in the three Higher Teachers' Colleges established at Kabul, Kandahar and Mazar-i-Sharif. The output was not enough to meet the demand and two new H.T.C.'s have been opened; one in 1971 at Jalalabad and the other in 1972 at Herat. This will enable the training of 700 new middle school teachers every year, and provide in-service training for about 500 teachers. The teaching force in the middle schools has a very substantial proportion of underqualified teachers (DMA graduates) and

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* DMA: Darul Mo'Allamein.

of lycee graduates without professional training. Priority is given to the training of the 1,100 lycee graduates, as the DMA graduates have at least primary teacher training.

The Faculty of Education graduates about 120 candidates a year. They specialize in one of the Departments of the Faculty - Language, Social Studies, Science and Mathematics, in addition to professional studies, and have some practice-teaching experience in secondary schools. They are obligated to teach for at least 6 years unless exempted by the Ministry. Not all graduates go to teach in the lycees; some enter the Academy and take training for elementary school teaching as teachers in service, or go into administration. As the output of the Faculty of Education of the Kabul University is not enough to meet the demand for graduates to teach the lycee grades, HTC-trained teachers are also employed in the lycees.

The qualifications for the recruitment of teachers for the different levels of schooling at present are as follows:

a) Primary grades (grades I to VI), 12th grade certificate plus one-year professional training

b) Middle school grades (VII to IX), 12th grade certificate plus two-year professional training

c) High school grades (X to XII), university degree.

The salaries of teachers are governed by the qualifications acquired in the number of years of study. There are 13 ranks in the teaching service to which teachers are periodically promoted. Each rank has a salary increment. Teachers graduating from Primary and Higher Teachers' Colleges start their service at particular levels and can move up by obtaining higher qualifications.

Increments are given for the following:

a) Possession of a 12th-grade certificate

b) Possession of a Higher Teachers' College graduation certificate

c) Possession of a B.A., M.A. or Doctoral Degree

d) Possession of a Pashto language qualification certificate.

Organization of programmes of further education

1. The in-service section of the Teacher Training Department of the Ministry of Education, Kabul, is the central agency responsible for organizing in-service courses, such as parallel training courses, refresher courses, seminars and conferences. The training institutions in different parts of the country which run in-service programmes have separate sections in each to deal with the programme.

2. In-service education programmes were initially organized only for the purpose of upgrading the educational qualifications of untrained teachers. Parallel courses for professional training were started in the Higher Teachers College for middle level teachers in 1967 and in the Primary Teacher Training Institutions for primary level teachers in 1971. The scope of in-service programmes is now expanding: educational broadcasts for teachers were introduced in September 1971, and special workshops for curriculum and textbooks began intensively in 1971. The question of introducing correspondence education is now being studied.

3. Whenever a new orientation is to be given in subjects of the curriculum or new subjects are introduced, the Curriculum and Textbook Department of the Ministry of Education, in collaboration with the training institutions, organizes workshops of about two weeks' duration to introduce the new materials and familiarize teachers with its relevance and implications. These workshops are held in the training institutions and use their personnel as resource persons. The new materials are also incorporated in the regular courses for pre-service and in-service training of teachers. Plans are being worked out to present the new materials and their implications through radio broadcasts for the benefit of school teachers who are not otherwise covered.

4. The subject areas covered by the in-service courses vary according to the purpose of the course. Courses for upgrading educational qualifications of unqualified teachers cover all the subjects taught normally in the high schools plus elements of such professional subjects as educational psychology, foundations of education, teaching aids and curriculum development. The in-service courses organized in the training institutions for the initial training of untrained primary and middle school teachers cover all the subjects at the same depth as required for regular training at these levels. The workshops on the new curricula - for example, on health education, mathematics or language arts - would cover the specific texts and materials produced in these fields. Workshops have been held for laboratory and co-operating school teachers for re-orienting them to new approaches in such topics as Teaching Materials, Art Education and Methods of Teaching Reading and Writing in Primary Classes.

5. Winter and summer vacation courses, intended for upgrading the qualifications of unqualified teachers, are so organized that one academic year's work is covered through three winter or summer courses.

6. The Curriculum and Textbooks project in the Ministry of Education, assisted by USAID, is a pilot project started in 1967 for producing new textbooks and materials for use in primary schools. New textbooks have been written and tried out in pilot schools and are just now being published. Workshops are held to introduce teachers to these new materials and their utilization.

Types of in-service programmes

1. a) Most in-service programmes are held in the Teacher Training Institutions. A few in-service programmes are directly organized by the Teacher Training Department of the Ministry of Education.

   b) Teachers who have passed grades IX, X or XI of general education are admitted to in-service courses to upgrade their qualifications to 12th grade. Teachers

who have passed are admitted to the in-service courses for teaching primary or middle grades - the one-year or two-year courses run as parallel courses with the regular training courses.

c) Final selection of teachers for undergoing the in-service courses is done by the Ministry of Education and Provincial Education Officers. Entrance examinations also have to be passed by those who seek admission to the in-service training course in the Higher Teachers' Colleges.

d) Incentives in the form of salary increases are given to those who improve their qualifications and obtain teaching certificates. Travel and food allowances are provided to teachers for attending workshops and seminars held for updating their knowledge and skills. No fees are collected from any one attending in-service training courses. All expenses are met by government.

e) Generally the in-service courses and seminars are conducted by teacher educators who are university graduates with special training in the Academy for Teacher Educators, Kabul. Staff in training institutions for in-service training is always selected from those qualified in the respective subject areas. Resource persons are also provided by United Nations and Bilateral Aid Experts (e.g., USAID/Columbia Team and the British Council).

f) The time table is so arranged that teachers are able to teach in the mornings and attend in-service training courses in the afternoons, or vice versa, as needed.

2. a) There are no specific further education programmes planned for trained teachers. However, some of the trained teachers from H.T.C.'s can obtain admission to the University for the degree course every year. The radio broadcasts in Pashtu and Dari,

which are a weekly feature, are availed-of by trained teachers even though the broadcasts are intended mainly for teachers in training. The radio broadcasts have also a magazine element in them with news and comments from teachers, intended to keep them informed of current affairs. Educational magazines are also regularly published by the Ministry for this purpose.

b) A few programmes on a limited scale are organized by the University for the further education of high school teachers in service: these are mainly confined to study by English language and Science teachers. The Science Institute has organized courses for supervisors of science teaching who proceed to the provinces to work. No professional organizations conduct courses for the further education of teachers.

c) The effectiveness of in-service training programmes is evaluated through questionnaires. The Broadcasting Service invites comments in writing from listeners.

In-service education for upgrading qualifications

A variety of approaches for the in-service education of teachers have emerged in Afghanistan and reflect the keen desire of all concerned to promote the training of teachers and their professional growth.

1. Primary school teachers. In 1969, it is estimated that out of a total of 11,522 teachers, only 2,677 had 12th grade certificates of whom only 928 were trained in DMA's. Nearly 7,000 teachers had basic education of less than 10th grade standard. A two-pronged approach has been evolved: on the one hand, the output of teacher training institutions has been raised to ensure that no untrained teachers are recruited to the teaching force. The in-service training programmes, on the other hand, are being designed to raise the educational and professional level of teachers in service.

Based on the Final Report of the Regional Symposium on the In-Service Training of Primary School Teachers in Asia

(AITE, Quezon City, 1967) the following plan was proposed for teachers with no professional training and was tried out in a pilot school (the Kabul DMA) and later expanded to other institutions.

Priority was given in the first instance to the training of 12th grade untrained teachers in the laboratory and co-operating schools. Part-time courses were organized covering the same subjects and periods as the pre-service 13th grade students except for practice teaching which could be arranged within the regular teaching schedule of the participants. The syllabus of the 13th year is followed, but with stress more on practical aspects of teaching, followed by question-and-answer sessions and demonstrations in the laboratory school. After graduating from this in-service training course, the teacher could attend seminars and workshops organized for the professional updating of trained teachers in the DMA's. The planning and co-ordination of the course is done by the In-Service Department of the Ministry of Education with the help of the Academy for Teacher Educators. Instructional materials and teaching aids are prepared by the Academy and its Audio-Visual Centre. At the end of each course a workshop is to be held to bring together the training staff to assess the results of the past year and decide upon adjustments to be made in the curriculum, methods and the programme of activities for the coming year.

An untrained teacher can now through in-service courses raise his qualification to the 13th grade level and also obtain the trained teacher's certificate. The primary trained teacher's certificate does not earn credits for entering the H. T. C.'s, however, as the courses in middle school teachers' training are not integrated with those of primary teacher training. The teacher can join the H. T. C. after 2 years of teaching, nevertheless, by taking an entrance examination or join the university by taking its entrance examination.

2. Middle school teachers. In 1969 a majority of teachers in the middle schools did not fulfil the standard qualifications required for middle school teaching - of 3,000

teachers, 1,000 were DMA graduates, 1,100 lycee graduates and the rest had lower qualifications.

In the H. T. C. Kabul, for teachers who have the 12-year lycee qualification, the first and second year H. T. C. 's courses are offered through morning and afternoon sessions to teachers in service. For convenience, the first-year course is held in the morning and the second-year in the afternoon. The subjects and the duration of instructional time are the same as in the regular course but the in-service candidates do not have practice teaching. Teaching done in school by the senior-year students is supervised every week by H. T. C. supervisors. This is supplemented by full-time instruction during the winter/summer session also to make up the necessary time. For middle school teachers who are untrained, and who work in distant places, release of time for 2 years is given for joining the H. T. C. pre-service course.

It is proposed to establish two types of emergency vacation courses for the middle school teachers in service who have 12th-grade certificates and who teach outside the 5 provinces where there are H. T. C. 's. These courses would supplement the existing training courses in the Higher Teachers' Colleges:

Scheme A, an emergency vacation course to be established in at least two of the five H. T. C. 's, over the Five-Year Plan. The programme consists of four 10-week courses in either summer or winter vacations plus two substantial projects or monographs supervised by H. T. C. lecturers and dealing with the major aspects of the student teacher's professional work or with his major subject area and a specified amount of supervised practice teaching. H. T. C. will conduct examinations to qualify. This training will be reckoned as equivalent to the existing pre-service and in-service courses in the H. T. C. 's for salary and promotion purposes.

Scheme B, an emergency vacation course to be established in at least two of the five H. T. C. 's, consisting of one vacation course of 10 weeks plus an academic year of

independent study with H. T. C. guidance and correspondence course supervision methods, followed by a second vacation course of 10 weeks, a second year of self-study and a final one-month course with examinations.

Vacation courses A and B are intended for middle school teachers: (a) in provinces which have no H. T. C.; (b) who are 12th-grade graduates from lycees; (c) who are 12th-grade DMA graduates.

Further training of DMA graduates through a shortened H. T. C. course has not been considered immediately necessary, and no scheme for the purpose has yet been evolved.

In Scheme A, the total number of hours will be 1,600 - which is comparable to the full-time H. T. C. training. An average of 6 subjects is offered during each vacation course. Arrangement of subjects is based on the principles that (a) there should be some 'education' subject in each course, and (b) basic subjects like mathematics for science students, and languages and social studies for humanities students should appear in each of the four courses. Of the projects, one should be from the student's major teaching field and the other should treat a pedagogical subject with his own classroom experiences and the results of his own testing and experimentation with pupils. Some practice teaching will be supervised by H. T. C. lecturers.

Scheme B, which can be completed in $2\frac{1}{2}$ years, offers a number of innovations. It stresses 'guided' independent study. The vacation courses will be devoted to orientation to study methods, practical work and demonstrations, as well as examinations. Practical help and guidance are to be given in writing assignments which the students will carry out throughout the course on their own. Radio programmes, tutorial group discussions and occasional visiting lectures by visitors to their schools are envisaged as additional means to help them.

In-service training programmes for updating knowledge and skills

1. Local level programmes. In primary grades I, II

and III, the teachers take all subjects, while grades IV, V and VI have subject teachers. These subject teachers are given two or three hours per week of refresher courses in their subjects at the Kabul DMA. Grade teachers are given courses on units of work (integrated) in short-duration seminars. All units of the primary school curriculum are covered. All DMA's and Higher Teachers' Colleges have freedom to conduct in-service courses and seminars, reporting later to the Ministry of Education. Seminars in student teaching for the co-operating teachers are quite frequent and last from 7 to 10 days. Apart from student teaching, school improvement programmes are also discussed in these seminars. Follow-up is done through regular contacts with laboratory and co-operating schools.

a) It is proposed that trained teachers who need further training in special areas like arts and crafts, physical education or preparation of teaching aids should be released from their teaching work to attend full-day short-term courses for a period of from one to four weeks.

b) Regional seminars for science teachers have been held to introduce the new science textbooks prepared by the Textbook Project. A few seminars for teachers of grades I and II for introducing the new textbooks prepared in Pashto were also held.

2. National-level seminars are held in all subjects of the curriculum of primary education as well as in supervision, library service, physical education, home economics, and science education. In the selection of candidates, instructors from the DMA's are given first preference in order to prepare them for conducting similar seminars for the co-operating school teachers. Instructional staff is selected from the DMA's where the Seminars are held. After discussions, lessons are usually tried out in the laboratory school in the afternoon, and followed up, in a further session, by discussions. Workshops for middle school teachers in science, mathematics, social studies and library organization were held in the Kabul H. T. C. for a duration extending from 2

weeks to one month. Certificates are given in all in-service courses.

3. The science lycee project. The Institute of Education in the University of Kabul formerly conducted three pilot projects in science in high schools for the revision of textbooks in chemistry, biology and physics. A staff member of the Institute was assigned to each of these pilot centres to train teachers and supervise their work. In Seminars which were held for teachers twice a week the science lessons were discussed and experiments were demonstrated. Sometimes workshops were held for two-to-three weeks at the Institute when members of the Institute staff worked with the teachers of the schools and discussed the problems of teaching science. Workshops were also held twice a year (in winter or summer to suit the different areas in the country) for the schools outside of the lycee project, extending from 6 to 8 weeks.

A Science Centre has been organized in the Mathematics and Science Department of the University of Kabul. It is sponsored by the Ministry of Education with Unesco assistance. The basic objectives of the Centre include the development of new science and maths curricula for grades VII-XII, together with new textbooks and instructional materials, and the development of appropriate science teaching equipment.

At present, 17 of the provinces are involved in the project with two supervisors in each. They train the mathematics and science teachers of the middle and high schools. The procedures followed are:

a) The two supervisors go from lycee to lycee helping teachers in the technical aspects of teaching.

b) Twice a year they identify certain major problems of teaching in the province and then hold either seminars or workshops with the help of the Centre in Kabul and the Director of Education in the province.

c) Once or twice a year the Science Centre in Kabul invites key teachers from the provinces for a workshop or a seminar on major problems of science and mathematics education.

4. Audio-visual materials. The Audio-Visual Department in the University of Kabul is engaged in the development of new teaching materials and in adapting foreign materials to suit the needs of the curriculum, testing them in the schools and, after evaluation, in their mass production. It is also engaged in training teachers, supervisors and principals in the utilization and maintenance of equipment and other materials through in-service courses of varying duration - some are only for a few weeks and others run into months. The teachers in the H. T. C. 's and the Academy are given in-service courses and training in their own audio-visual centres. Teaching aids such as maps and charts are made and distributed to schools through its mobile unit, which also conducts a one-day seminar on-the-spot to familiarize the teachers with them.

5. English teaching improvement programmes. The Institute of Education conducts in-service training programmes for teachers of English. Seven pilot centres were selected in the provinces, each serving at least 10 schools in the neighbourhood. One Area Supervisor is stationed in each centre. He visits schools and observes classes, and collects data for discussions at seminars and workshops.

There are four National supervisors for English working at the main office. They are engaged in the revision of textbooks and in the preparation of standard examinations for the schools involved in the project. They also do research on the teaching of English in Afghanistan; conduct seminars for the area supervisors once a year at Kabul; and assist in seminars held in a province.

6. Education through radio. Since 1967, a Unesco expert in educational broadcasting has been working in Afghanistan. His task has been to establish a nation-wide educational broadcasting service covering both in-school and out-of-school education. In 1968 an overall educational broadcasting plan which included radio programmes for teachers was prepared, covering the period up to 1972. The programmes were designed and tested for reinforcing the teaching of the two national languages - Dari and Pashto, and the teaching of mathematics, reading and primary science. A two-year course by

radio for the training of primary and middle school teachers in service and training colleges was prepared in 1969; transmission began in 1970. Production facilities are provided by Radio Afghanistan.

The course is based on a series of model lessons given by experienced Afghan teachers. A monthly magazine programme 'Time for Teachers' and a short bi-monthly news broadcast for 15 minutes on general education matters prepared from materials given by the Ministry of Education have also been added. Total educational broadcast time is 6 hours per week during school sessions; the radio programme for teachers is organized at present for only one hour a week, a half-hour in each language, on Sundays and Wednesdays.[1] About 1,000 schools and colleges with a potential audience of about 14,000 in-service and student teachers are at the receiving end. A Teacher's Broadcasting Manual, with notes for each broadcast in Dari, Pashto and English was circulated to all schools before the programmes began. For listener participation, the programmes call for their response to questions, or suggest simple experiments to be done. Two films have also been produced for primary teacher training in conjunction with other international agencies and the Academy which closely ties in with the teacher training course and clarifies the radio programme materials. It is hoped to gear the programmes to correspondence education sometime in future.

Reception is excellent throughout the country and listening by all teachers is compulsory, in groups under the supervision of a staff member. Several hundred transistor radios have been officially distributed; many teachers must use their own private radios. A field-team of teachers tours the country to find out the reaction of listeners and to help them with difficulties that may arise.

A school broadcasting programme is to begin in 1973 and personnel are being trained for it. The Ministry of Education has approved the inclusion of educational broadcasting instruction in the syllabus of all teacher training colleges.

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1. Sunday is a working day; Thursday afternoons and Fridays are holidays.

BURMA

General background

Development of the new educational system. The Union of Burma is a Republic comprising Burma proper, the Shan State, Kachin State, the former Karen State, the Kayah State and the Chin Special Division. The Revolutionary Government of Burma assumed control on 2 March 1962. It declared 'The Burmese Way to Socialism' on 30 April 1962, which governs all official policy today, including that of education.

All educational establishments in Burma are, since 1966, the responsibility of the Government, its policy being to establish 'an educational system equated with livelihood and based on socialistic moral values'. In practice this has meant a major stress on vocational training, primarily in agriculture, and a growing stress on science, not only in the secondary but also in primary schools. Primary education is available to every one, and at the beginning of 1971 about 95 % of the children of primary school age were in school. More than 65 % of the people are literate and concerted efforts are being made to wipe out illiteracy within a few more years.

Early in 1971 there were 16,599 primary schools, 1,117 middle schools and 556 high schools, with teachers in them numbering 65,326; 14,121; and 7,695 respectively. Teacher training establishments numbered 15, with 396 teacher educators and a student-teacher enrolment of 5,337. Of these, 11 are Teacher Training Schools (1-year course), 3 are teacher training colleges, and one a degree-level institution - the Institute of Education in the University of Rangoon.

In addition to the ordinary educational facilities, night schools, 3-R courses, evening classes, skill-improvement training classes, courses in correspondence, and workers' classes have also been organized for the benefit of the

working people who cannot attend regular schools, or who have been subjected to interruption of their education, or who wish to improve their education still further. Education is also being given through Summer Volunteer Service Programmes and other similar arrangements to develop practical education.

Recruitment policy. With the introduction of the New Basic Education, the structure of the school system was changed from that of 4:3:2:1 in 1967-68 to one of 5:4:2, making a total of 11 years of schooling. While primary schools have 5 grades, all middle schools have 9 grades (primary and middle) and high schools, 11 grades (primary, middle and high).

The guiding principle today is 'teachers first, schools later.' The number of teachers required are therefore now trained before new schools are opened. This has served to break the old practice of appointing unqualified teachers and giving them the necessary training afterwards.

Primary Assistant Teachers were for a long time appointed from among those who had passed the middle school examination, and were required to take the primary assistant teacher training courses unless they had taken the training earlier. From 1970, the minimum educational qualification for primary teacher training was a passing grade in the High School Final Examination (after 10 years of schooling) and a pass in an Entrance Examination conducted by the Directorate of Education (Teacher Training Branch), as well as interest in co-curricular activities and general knowledge in current affairs, especially education and social services. Junior assistant teachers were recruited from candidates who had passed the Basic High School Examination after 11 years' schooling, and were required to take the junior assistant teacher training courses for middle school teaching unless they had the training earlier. From 1971-72 only teachers in service who have taken the primary assistant teacher's certificate and put in 3 years as primary assistant teacher are admitted to the training for junior assistant teachers and then appointed to teach middle grades. Senior Assistant teachers are appointed from among graduates, preferably those

who have also a Bachelor of Education Degree or a Diploma in Education from the University.

The number of untrained teachers is rapidly diminishing. It is now about 10 % among the secondary school teachers; at the middle level about 20 %; and at the primary level, about 25 to 30 %. Four thousand primary school teachers are trained every year, of whom about 3,000 are teachers in service.

Organization of programmes of further education

Government policy. The main objective of education policy is laid down in the Programme of the Revolutionary Council:

> The Revolutionary Council believes that the education system unequated with livelihood will have to be transformed. An education system equated with livelihood and based on socialistic moral value will be brought about. Science will be given precedence in education.
>
> Our educational target is to bring basic education within the reach of all. As regards higher education, only those who have promise and enough potentialities and industriousness to benefit from it will be encouraged.

To fulfill the aims and objectives of the new education policy, many reforms and changes have been made in the content of education, the textbooks and the training of teachers. Many more are to follow.

The following major steps have been taken to implement the education policy:

1. expansion of primary education and introduction of universal, free, compulsory primary education of at least 5 years to make basic education accessible to all children of the country;
2. expansion of technical, agricultural and vocational education at the secondary level;

3. intensification of the efforts to increase the output of the qualified teachers and to improve the quality of teacher education;

4. expansion and promotion of the teaching of science;

5. introduction of co-curricular activities to provide experiences and practical training in socialistic moral values;

6. orientation of higher education to produce specialists to meet the manpower needs of the country.

All schools and training institutions are established, controlled and financed by the Government. The Basic Education Council headed by the Minister of Education works through three Standing Committees, of which one is the Teacher Education Supervision Committee. The duties and functions of the committee are: (i) to revise and draw a suitable curriculum and syllabus for teacher preparation, (ii) to help realize the aims of Teacher Training Institutions and Schools, (iii) to produce and prescribe the textbooks for the training institutions, (v) to improve the abilities of teachers already in service, (vi) to prescribe the minimum qualification of teachers, (vii) to evolve an effective method of teacher registration, (viii) to evolve a teachers' code of ethics, (ix) to recommend to the Basic Education Council the opening of new training institutions for teachers, (x) to improve the techniques of teacher preparation.

The Workers' College at Rangoon and the Arts and Science University at Mandalay are permanent centres of in-service training for upgrading the qualifications of undergraduate teachers to degree level. The Institute of Education of the University of Rangoon is another centre for in-service education. For untrained graduate teachers in service, correspondence courses leading to B. Ed. degree (transitory provision) or a Diploma in Education are conducted by the Institute, in co-operation with the Directorate of Education, and for certified primary and middle school teachers regular in-service courses are offered toward acquiring graduate degrees in teaching.

Organization of programmes

The Directorate of Education (training branch) is in charge of organizing summer courses for all levels of teachers, conducted annually with the co-operation of the Rangoon Arts and Science University, Mandalay Arts and Science University, the Institute of Education, the Institute of Economics and the State Teacher Training Institutions.

Whenever a new orientation is given to the subjects of the curriculum or a new subject is introduced, in-service courses are organized for all the teachers in the respective subjects of the school grades involved. The centres are at work all the time for English and Science, 12 centres for Geography and one centre for Physical Education.

During the summer of 1970 a total of 750 Senior Science teachers, 400 primary teachers, 3,220 junior History teachers, 700 senior Geography teachers and 600 junior Physical Education teachers were given intensive reorientation and refresher courses in connection with the changed syllabi in basic education. All teachers actually teaching first- and second-year English in schools were retrained in summer 1971, as the new method of Teaching English was to be introduced in the first two years of the lower secondary level in the academic year 1971-72. In October 1970 about 100 instructors were recruited by selection from schools and universities including teacher training institutions and put through an intensive 4-week training course. During the training period they were instructed not only in the techniques of teaching English according to the new method but also were taught how to make related teaching aids. Reorientation courses for junior science teachers, junior geography teachers and junior physical education teachers were also held during 1971 summer.

Scholarships awarded by the Government and Fellowships awarded by the International Organizations and Governments are made full use of, for the best among the in-service teachers to enable them to study abroad in areas which are conducive to the welfare of education in the country. During the scholarship period teachers are treated as on deputation and their full salary including cost of living allowance is paid to the families of the scholarship holders, irrespective of the number of years of training abroad.

To widen the horizon of knowledge of teachers and teacher educators of all levels, a magazine named Pyinnya-Lawka (The World of Education) is published by the Ministry of Education in collaboration with the Ministry of Information. Monthly discussions are held by the teachers and teacher educators on selected articles and reports which appear in education magazines. Their discussion reports are sent to the education officers concerned and to other educational institutions so as to share their thinking and experiences with fellow teachers and teacher educators.

The education of teachers of all levels is promoted through the Curriculum Development Committees of each school and of the region. Subject Curriculum Development Committees are formed in every school and in every region. They have to discuss regularly the syllabus, the teaching methods and the new knowledge to be added to the contents of the subjects. They are motivated to do so with more than theoretical interest as they have the right to give suggestions in connection with the syllabus and the curriculum to the Curriculum, Syllabus and Textbook Main Committee.

One of the aims and functions of Teacher Training Institutions is 'to engage in research work that would contribute to widening the horizon of the knowledge of teachers, improve their teaching techniques and raise their intellectual and professional level'. To fulfill this aim, teacher educators of all teacher training institutions are assigned to make general surveys of the teaching methods practised in schools and to evolve better and new teaching methods. Professors and lecturers of the Institute of Education and teacher educators of the Teacher Training Institutions are required to take part in the dissemination of research by reading papers on research projects in education or by joining discussions in the Research Congress held annually.

Types of in-service programmes

Full-time institutional courses. Teachers are now prepared in the main by three categories of institutions: eleven Teacher Training Schools which train teachers for the

primary classes; three Teacher Training Colleges which train teachers for lower secondary grades and an Institute of Education which trains teachers for the high (upper secondary) classes. The Training Schools offer a one-year course for primary teachers. For primary assistant teacher's training, 25% of the seats are reserved for those already in service. Up to 1969-70 the Training Colleges ran a two-year course for training Junior Assistant teachers, but since 1971 no fresh candidates are admitted to this course. It is now an in-service training course for the certificate primary assistant teachers and its duration has been reduced to one year. Full-time institutional courses are available to teachers in service selected on the basis of merit for attending degree or diploma courses in the Institute of Education.

Part-time courses. An undergraduate primary or junior assistant teacher can upgrade his qualifications to degree level by taking in-service courses of the Workers College in Rangoon or attending the evening classes of the Mandalay Arts and Science College.

Correspondence courses. The Institute of Education offers a correspondence course for the B. Ed. degree (transitory) from 1968, and a similar course for the Diploma in Education from 1970 for the uncertificated graduate teachers in service.

No fees are charged of the trainees, and all the teachers in service undergoing training in the teacher training institutions including the Institute of Education are awarded Kyats 75 (US $18) per month as stipend. Those who have undertaken to serve in remote areas after training are given a special stipend. The period of training is included for the purpose of calculating service benefits.

For updating the competencies of teachers in service, regular summer courses are conducted in the different school subjects. Committees of teachers are formed for periodic reviewing of curriculum materials. Professional discussions are a regular feature in schools. Radio broadcasts are used for improving teaching skills.

Further education of teachers for upgrading qualifications

Full-time courses. Primary Assistant Teachers are appointed to teach primary classes. If they are already trained for primary level teaching and hold the Primary Teacher Certificate, and have passed the Basic High School Examination or Matriculation or School Leaving Certificate Examination, and completed three years of service as primary assistant teachers, they can look forward to upgrading their qualification for teaching middle school classes. Training of middle school teachers is carried out by three Teacher Training colleges, which are in Rangoon, Mandalay and Moulmein. These take in roughly 600 in-service trainees every year. The candidates have to pass a competitive examination conducted by the Department of Education for selection, and must then qualify in an interview. The selected candidates are given a stipend of Kyats 75 per month (roughly US $16) and all service benefits are allowed. The training is full-time for one year, and leads to the Junior Assistant Teachers' Certificate Examination at the end of the year which is external, conducted by the Directorate. An increase in salary follows appointment to middle schools.

For teachers in middle schools who have taken the Junior Assistant Teachers' Certificate and put in three years of service as Junior Assistant Teachers, provision is made for further study in the Institute of Education. For selection they have to qualify by taking a competitive examination conducted by the Institute of Education. They will be admitted in the second year of the 5-year course for the B. Ed. degree. During the training period they will get a stipend of Kyats 75 and study leave with service benefits.

High school teachers with B. Ed. qualification and at least 3 years of service are selected by the Institute of Education for the M. Ed. degree course on the basis of their rank in the B. Ed. examination. The M. Ed. is a two-year course started only in 1970-71. The teachers selected would get study leave and all service benefits, except salary during the period. The Institute will give them research grants, or stipends depending on their availability.

Part-time and evening courses for acquiring qualifications. The Workers' College under the Arts and Science University, Rangoon, runs evening programmes for those who wish to prepare for a graduate degree. The duration of the course is five years; instruction is given from 5 to 9 p.m. on weekdays. However a student can register for fewer courses at a time, in which case he would attend during fewer hours. The Worker's College has in the current year 1,500 students, of whom many are teachers. The Arts and Science College provides laboratory accommodation and the Institute of Education provides the additional classrooms required. An evening class is run similarly in the University of Mandalay. The courses are the same as for the regular degree and the same standards are maintained. The first batch graduated in 1970.

An Institute of Foreign Languages has been operating in Rangoon since 1964 with a language laboratory and up-to-date equipment for teaching foreign languages. Both full-time and part-time courses are offered. The full-time course is for two years, four hours a day for five days a week. Diplomas are awarded at 'O' and 'A' levels. A short summer course is also available for spoken language. 700 students are now in attendance in one or the other of the courses - English, French, German, Russian and Japanese. Of the 100 students enrolled in the part-time English course, 50 are Junior Assistant Teachers. They attend classes two hours a day for a period of three months.

Correspondence course. The Course for Diploma in Education run by the Institute of Education is a correspondence course extending to two years. 460 teachers are enrolled as students in the first-year and 320 in the second-year courses. The intake will be increased to more than 500 from 1973. The course is open to graduates of universities who have been teachers for not less than three years at any level. There is no competitive examination for admission as no deputation for study is involved. Correspondence materials are prepared in the Institute of Education and sent by post. Assignments are given to be worked and returned to the Institute for grading and comments, after which they will be sent back to the parties

The candidates have all to attend institutional courses during the two summer vacations in the Institute of Education, each lasting for one-and-a-half months. No practical teaching and practical tests are given as all candidates have teaching experience.

Studies abroad. Scholarships awarded by the Government, by friendly countries and by international organizations such as Unesco and the Colombo Plan are available for teachers to go abroad for higher studies. Selection is always made on the basis of competitive examinations. Countries to which teachers have gone for studies include Australia, Canada, Czechoslovakia, Japan, Syria, the United Kingdom, and the Union of Soviet Socialist Republics.

In-service education for updating knowledge and skills

Summer courses in school subjects. The Educational Directorate organizes periodical summer courses, assisted by lecturers from the University and from the Institute of Education. They are conducted for different subjects. The duration varies from one to one-and-a-half months, excepting in the case of geography, which is only a one-week course. Prior to the conduct of the courses all instructors are invited to meet together and discuss the programme; briefing is done by experts in the Educational Research Bureau and in the Department who constitute the Committee on Refresher courses. The first courses for high school teachers were conducted before 1971. Courses were organized for the middle school teachers from 1970 as follows:

a) Summer course in the teaching of English in grade VI (1970) for training in the new syllabus. In 1971, summer schools were held to give further training to teachers of English for grades VII and VIII, and in 1972 for the teachers of grades IX and X. All teachers of English at the respective grades were involved in these summer courses.

b) Summer course in Physical Education for middle school teachers (1971). This too was for all teachers in the country.

c) Summer course in science (1971). All middle school science teachers in the country were involved.

d) Summer course in Teaching of Geography (1971). This was for one week, and for all teachers in the country.

e) Summer course in the Teaching of History, was conducted similarly in 1970.

As the numbers involved are large, 24 centres are at work all the time for English and Science, and 12 centres for geography or history when these courses are given. The Physical Education summer course is held only in one centre, at Rangoon. These centres include the training institutions as well as other schools and colleges. Normally, teacher training schools conduct refresher courses for primary teachers, and teachers' colleges the courses for middle school teachers.

The procedure in these summer schools consists of lectures and demonstrations and practical work like preparation of lessons and demonstration teaching in the forenoon, and discussions on the first day of the session to find out the difficulties teachers experience as well as their attainments. The tests, in booklet form, are scored on standard forms and the results are analyzed. The teachers are grouped according to the common difficulties experienced and their experiential background and are treated separately (especially during practice teaching and discussion sessions). A final post-test is given at the end of the course. This is compared with the pre-test to find out whether there has been improvement. If not, instructors may be changed. At the completion of these courses, certificates are given to all. These certificates are considered at the time of promotion.

Travelling allowance and subsistence allowance is given to all participants, or else lodging and food are provided free. Generally, teachers attend the nearby institutions.

Summer courses in secondary science teaching in the university. Science teachers working in secondary schools near the seats of constituent colleges or universities like

Rangoon, Mandalay, Bassein and Moulmein are enrolled for summer courses in these centres. The courses extend to not less than 4 weeks. Lecturers from the Arts and Science University, the colleges and the Institute of Education give instructional courses in practical work in physics, chemistry and biology. Some candidates may have had no university degree, but nearly all are trained teachers.

Courses in 'New Mathematics' are included in the pre-service training. In-service courses are under consideration.

A three-month course on political science is held for all teachers, in progression, by the School of Political Science in different centres of the State. This is a full-time course, not merely for teachers but for all government personnel. Those deputed are entitled to full pay for the period.

The training of teachers for school health. This is a new in-service education project to be implemented with the help of the Department of Health.

The training of teachers for social services. The Youth Affairs Directorate selects teachers in consultation with the District Education Officers for training, during the summer vacation, in all kinds of services, such as contribution, health and happiness courses, and sports and activities. Financial aid in the form of travel grants, lodging and food is given.

Professional growth through committee work. Every school has a Curriculum Committee of teachers, who meet once a month to discuss the content and methods of teaching and make suggestions for improvement. There are also Curriculum Committees of the townships. They meet at least once a month according to the instructions given by the Directorate of Education. They are made up of heads of high schools and middle schools and the deans of subjects (even in the middle schools there are deans in charge of every subject).

Teaching staff of each training institution meet once a month and all training schools combined meet once a year to discuss curricular problems, teaching trends and administrative problems.

In-service education for updating knowledge

Subject committees are formed for the revision of syllabuses, preparation and production of textbooks, teachers' handbooks, pupils' work books and teaching aids, and the mode of examinations. The committees include professors and lecturers of the university and the teacher training colleges as well as education officers, educationists and subject teachers from schools. These are the sub-committees of the Curriculum, Syllabus and Textbook committee set up by the Ministry; their work has therefore to be submitted to the main committee for approval. Review and revision are made by committees in which also teachers are members. Participation of teachers in these committees has proved to be a uniquely effective form of in-service education and in raising the participants' level of awareness of current needs and developments in a changing society. The Teachers' Handbooks prepared by them set the methods to be followed in teacher training.

Training in using new science equipment. UNICEF is helping the Science Materials Production Centre - a factory in the Physics Department of the University of Rangoon where students design and produce new teaching equipment. Only those who volunteer work in the manufacturing centre. The Institute of Education trains its science teacher trainees in the last year of the course with these materials and in their utilization. A new chemistry laboratory equipment centre is now being planned in the Chemistry Department to give practical training to students and teachers. Similar work is being done in the Kanbé Training Centre by teacher trainees. In the training colleges teachers are given training in the use of the new equipment.

Radio programmes. Although radio is not used specifically as part of the correspondence course for the Diploma in Education, radio programmes for teachers are offered as a regular feature. The educational broadcasts are mostly intended to help teachers in handling lessons rather than being planned for children's enrichment only. The lesson plans are sent to the schools in advance, and provide the material for pre-broadcast and post-broadcast discussions by teachers.

Self-improvement through participation in literacy campaign and other socio-educational programmes. The Burmese Way to Socialism offers opportunities to the teachers to volunteer for literacy work and teaching in night school. Part-time secondary education for working people has been provided through evening classes, conducted by the Labour Directorate. Teachers are all volunteers who receive no pay and are drawn from government offices and schools. Classes are held on week-days from 5 to 8 p. m. and on Saturdays and Sundays. There are also night schools run by the Youth Affairs Division, to which students of regular schools who fail more than twice are sent, to minimize wastage. More important still is the literacy campaign which has been conducted successfully with the help of teachers and student volunteers during vacations. Since 1969, in addition to school teachers in service and students from high schools and colleges, 3-R teachers have been appointed in order to intensify this programme all-year-round in selected districts, with the result that Burma won the Mohammed Reza Pahlavi Prize for its efforts in the eradication of illiteracy in 1971.

Teachers play a role in organizing the Students and Youth Festivals, held once in every three years in one selected centre in the State. Here the main activities include display of teaching aids and demonstration of teaching methods. Other activities are physical displays, sports, games and dances and competitions of several kinds. Foreign countries including India, Japan and the U. S. A. participated in the Festival held in 1970 to mark International Education Year.

Seminars. The First General Education Seminar was held in Mandalay in 1964 on the theme "Towards a Socialist Education". The second seminar held in 1965 at Rangoon was on the Training of Teachers. The first seminar was attended by the highest officers of the Ministry of Education, Education Department and members of the Education Supervisory Committees and University professors and teachers. The orientation of teachers to socialist principles, the improvement of curricula, textbooks, and teaching methods, and the grading of textbooks were among the major topics of discussion. The

Teacher Training Seminar was attended by teachers of all teacher training colleges in the State along with Ministry officials and others. The Third General Education Seminar was held in Mandalay in 1968. These seminars have played an important part in shaping the new education system.

A Librarians' Seminar was held in 1968 which resulted in the compilation of a Library Manual. The Education Officers' Co-ordination Seminar was held in 1967, and was devoted mainly to exploring ways of improving the quality of education. It stressed the teaching of science and mathematics, and the role supervisors had to play in the development projects. A University Co-ordination Seminar, aimed at linking the field of higher learning to the realities of life in the country and the world was also held in 1967.

A Seminar on Examinations was held in 1970 at the University of Rangoon. Members of the General Education Council, the Curriculum, Syllabus, and Textbooks Committee and Boards of Examiners participated. Their recommendations are implemented when approved by the Council of Ministers.

The significance of these seminars lies in the fact that teachers of all ranks, from the lowest to the highest, are being involved in policy making, and this involvement leads to professional growth and evokes a sense of responsibility and dedication to the tasks devolving on them. The Education Minister, speaking at the Third Education Seminar pointed to this benefit when he said: "The Revolutionary Government has done away with the bureaucratic machinery which did not provide any room for discussions with the lower echelons of the teaching staff. This fact was highlighted by the Seminar. It has given a forum for teachers and educational personnel of all grades from the highest educational officials to the primary school teachers to air their views. This is socialist democracy in action."

INDIA

General background

Educational policy and organization. The Indian Union is constituted of a number of States, each of which has autonomy in organizing programmes of education, as education is primarily a State responsibility. The broad pattern is however the same throughout India. The Central Ministry of Education through its different agencies like the National Council of Educational Research and Training (NCERT) and the University Grants Commission lays down policies and guidelines for development, and helps development through financial growth grants, advice and professional assistance. The pattern of school education is, generally speaking, as follows:

Kindergarten or pre-primary classes - 1 year to $2\frac{1}{2}$ years;

Lower primary - grades I to IV or V;

Upper primary or middle school - grades V to VII or VI to VIII;

Secondary school - grades VIII to X or IX to X, constituting high school classes;

Higher secondary school - grade XI, or Intermediate grades XI and XII.

At the secondary level, there are multi-purpose schools with different streams such as Science, Arts, Commerce, Agriculture, and Technical studies.

Teacher training at the primary level is given to candidates with 10 or 11 years of schooling for a period of two years in most States, but only for a period of one year in some others. Some of the States (like Haryana, Kerala and Punjab) have reached a saturation point in the training of teachers and are therefore converting the primary teacher training institutions into centres for in-service education. In some others,

however, there are even now many teachers who are untrained or trained with qualifications below 10 years of schooling. Secondary teacher education is generally given in teacher training colleges which are affiliated to universities or teacher training colleges or departments which are constituent parts of the universities. There are also in some States institutions for secondary teacher training which are not part of any university. In all these cases, however, the course is consecutive professional training of one-year's duration for graduates of universities; i.e., those with 14 or 15 years of study. A new development is represented by the Regional Colleges of Education which are under the Central Ministry of Education, where four-year courses are run for 11-year school leavers to teach some special subjects in high schools.

Recruitment policy. Teachers trained for the primary level teach grades I to IV or V while the middle section of the school (upper primary) which is usually from V to VII is handled by teachers trained for either primary or secondary level teaching or untrained university graduates. High school grades; i.e., grades VIII - X are mostly taught by teachers who are trained university graduates. Higher secondary classes - grades XI and XII are to be taught only by those who have a Master's Degree in the subject and teacher training although, in subjects in which such teachers are not available, others may also teach.

According to the Second All-India Education Survey carried out in 1967 by the NCERT, 1.2 per cent of all school teachers had general qualifications of 'less than middle pass', 34.2 per cent were non-matriculates (having less than 10 years of schooling), 38.4 per cent were matriculates, 15.9 per cent were either graduates or post-graduates, and the remaining 10.3 per cent were either intermediates or special teachers like music, craft and physical education teachers. This means that about 75% of teachers in the country were either matriculates or had lower qualification. About 33% of the primary school teachers, 28% of the middle school teachers and 34% of the high school teachers were untrained. The number of unqualified and untrained teachers teaching at all levels of school has been greatly reduced since then.

As the qualifications required for first-level and second-level teachers are different, their salary scales are also different. University graduates appointed to primary schools and Master's Degree holders appointed to Higher Secondary schools get higher salaries than others, however.

Organization of programmes for further education

The National Council for Educational Research and Training (NCERT) is the central agency for educational research, training and extension services. This agency runs, as an integral part of it, a National Institute of Education (NIE) which offers diploma courses in research, guidance, educational administration and other areas. Although intended for teachers in service, these are taken more often by teacher educators than by teachers. Non-diploma training courses, seminars and workshops for teachers in service are held by the Department of Teacher Education of the NIE at its headquarters in Delhi and in the different States.

Till 1970, extension work was the responsibility of a Department of Extension and Field Services in the NCERT. This has now been abolished. The NCERT has now appointed field officers in each State or zone for looking after this and other activities of the organization. Extension service centres established by the NCERT in the States, were first mainly concerned with the in-service education of secondary level teachers. Later, extension services centres were established for primary school teachers also in most of the States.

A Central Institute of Education was first established in Delhi charged with duties of pre-service and in-service training of teachers. Four Regional Colleges have also now been set-up, Ajmer for the northern region, Bhuvaneswar for the eastern region, Bhopal for the central region and Mysore for the southern region. These are under the NCERT, and each of them organizes and conducts programmes for teachers in service, including summer courses and correspondence courses.

A Central Institute of English has been set up at Hyderabad to train English teachers deputed by States for

working in training institutions, States Institutes of Education and in high schools. Similar institutions have been set up in a few other places also like Bangalore in South India and Patna in northeast of India. The NCERT had also set up Science Institutes in the States, for conducting in-service education in science, mainly though not exclusively for secondary school teachers. Research, Evaluation and Guidance Departments were also organized by the NCERT in the States, for studying school problems and conducting in-service courses for primary and secondary teachers particularly in modern methods of evaluation and guidance.

A State Institute of Education was later established in each State, primarily for primary education. In-service education of primary school teachers and supervisors is now the major responsibility of the State Institutes in most of the States today. In some States, they also share in the in-service activities for secondary education. They organize conferences and seminars for senior education officers, supervise extension service centres in the teacher training institutions for elementary teachers and generally assist Education Departments of the States in the preparation and implementation of Education Plans.

When new subjects are introduced in the curriculum, or a new orientation is to be given to teaching or testing, seminars and workshops are held for teachers in service by the NCERT, or the State Institutes. For instance, for introducing new methods of testing and measurement in schools as part of the examination reform proposals in the country, the NCERT first organized several central and zonal seminars and workshops for selected teacher educators; these were followed up by the State Institutes, each organizing, in co-operation with the NCERT and its field services personnel, with local seminars and workshops for teachers. The State Institutes conduct seminars and workshops for primary and middle school teachers in the teaching of English, Social Studies, New Mathematics, whenever a new curriculum is introduced and frequently for reorientation to new methods and techniques of teaching. Very few attempts were made in the early stages

to put the same candidates through a successive series of graduated in-service courses or seminars in the same area or subject field to acquire competencies of a high order; now many State Institutes are doing this.

New Mathematics, integrated science teaching and teaching of the English language through the structural approach were started as pilot projects in many States before they were widely adopted.

Types of in-service programmes

Teachers in service receive further education to improve their qualifications in the following ways:

For academic upgrading

1. Most of the Universities in India allow teachers to improve their academic qualifications by taking examinations, up to Master's Degree level, as private candidates without undergoing any course in a recognized institution.

2. They can also join regular part-time (morning/evening) classes or correspondence courses.

   The Delhi Administration conducts a School of Correspondence courses for the Higher Secondary Examinations; more than 6,000 students are enrolled, some of them teachers with S.S.L.C. qualification. In the Delhi University, correspondence courses are available for taking the B.A. degree.

For professional training of untrained teachers

There are different provisions for the training of both primary and secondary untrained teachers in service.

1. Primary school teachers

   a) Untrained teachers in government schools are deputed with all service benefits but with or without salary, to regular training courses in the teacher training institutions.

b) A number of untrained teachers in service undergo teacher training programmes through an intermittent course in which the candidates have to attend the training institution for two terms of $3\frac{1}{2}$ months each, with a gap of six months. The teachers complete the practical part of the training programme in the schools in which they are serving, under the guidance of training institution staff. They have to be in the training institution for seven months to complete courses on Foundations of Education.

c) The State Institutes of Education in Rajasthan and U. P. have organized correspondence courses for untrained elementary school teachers. In Rajasthan the course extends to 1 3/4 years, out of which the candidates have to attend the institute for 80-to-90 days during vacations split in four convenient periods of time to complete the practical work.

In Uttar Pradesh the course is of $1\frac{1}{2}$ years divided into three terms of 6 months each. They are expected to attend regular classes for 8 weeks to complete the practical part of the training programme.

d) In some States, like Mysore, untrained teachers in service receive their training through part-time evening courses specifically arranged for them.

2. Secondary school teachers

a) Untrained teachers in service in government secondary schools are deputed with service benefits, and with or without salary, to the regular training courses organized by the training colleges or colleges of education by the Education Departments of all the States.

b) Some States like Assam provide for part-time (evening/morning) courses for training secondary school teachers. These courses are open to new entrants as well as to untrained secondary teachers.

3. Upgrading professional qualifications of trained teachers

a) Some universities like the University of Himachal Pradesh allow trained and experienced elementary school teachers who are graduates to become secondary school teachers by undergoing a correspondence course of 14 months' duration. Some of the Regional Colleges also have this provision. The Central Institute of Education, Delhi, operates a correspondence education programme of 16 months leading to B. Ed. degree.

b) The Jamia Millis, Delhi, has organized M. Ed. classes for teachers as a part-time course to suit the double-shift system in the schools of Delhi in morning session for teachers who work in the afternoon and vice versa.

c) There are M. Ed. courses in some other universities which can be taken by attending vacation sessions, (e.g., Dharwar).

Seminars and workshops for the further education of teachers in service are organized by the NCERT at a central place or in a Region or State for programmes centrally planned. The venue is selected by the NCERT if it is to be an all-India seminar or workshop; by the regional organization if it is to serve the region and by the State institute concerned if it is to serve the State only. Staff from the NCERT help as resource persons along with regional and local staff depending on the nature of the seminar or workshop. For all of these, candidates are usually deputed by the States, but their travelling and subsistence allowances may be paid by NCERT. For regional or State problems, seminars and workshops are

organized mainly by Regional and State institutions. NCERT personnel may attend them as resource persons if invited; otherwise they would be staffed by locally available experts. For State seminars all expenses are met by the State from its own funds or from central funds earmarked for the purpose.

Summer Institutes in the teaching of certain subjects like Science, Mathematics, Geography are organized for teachers' professional growth by the University Grants Commission in co-operation with NCERT and the Universities. The University departments and training institutions for secondary teacher education, especially the Regional Colleges of Education, organize summer institutes for school teachers in different subjects during the long vacation. State Institutes of English and the British Council co-operate in organizing summer courses in English for school teachers. The British Council also organizes short term courses in science for school teachers. The United Nations Schools Organization organizes conferences and sometimes workshops for teachers for instruction on the United Nations in schools. Teachers are deputed by the States for these programmes.

Radio broadcasts are not utilized in any substantial way for the further education of teachers by the Centre and States. Talks on the radio on problems concerned with education and teaching are common, however. Teachers participate in these programmes and they also have to prepare for utilizing radio lessons given regularly in most of the States as part of the school Broadcast Programme. Educational T. V. programmes are available in Delhi only.

The NCERT conducts a Seminar Readings programme for teachers. Teachers are given assistance in conducting action research or trying out new experiments in teaching and prizes are awarded for the best essays written on these or other educational problems facing them. Teacher's organizations organize symposiums and seminars on selected themes. Most of the States have teachers' organizations which hold annual conferences and publish journals; these are affiliated to an All-India Federation of Educational Associations. The Federation holds annual conferences in different

parts of India each year, and sectional meetings in which teacher delegates actively participate are held on different themes. It publishes, apart from the proceedings of these meetings, a periodic journal and many bulletins, which are available to its members.

Incentives to teachers for improving their academic and professional qualifications. (1) Untrained teachers deputed for teacher training receive their salaries for the period of deputation and are treated as on duty; (2) In most cases experienced teachers undergoing teacher training courses are exempted from payment of tuition fees etc. In addition, they are paid stipend to meet expenses on training; (3) Books, and instructional materials required during training are made available to them by training institutions; (4) Provision is available for study leave for improving one's academic and professional qualifications.

For attending seminars and workshops, which are held not in the locality in which the teachers reside, travelling and subsistence allowances are given. No certificates or credits are generally awarded, and attendance does not lead to any salary increments.

Further education of teachers for upgrading qualifications

In India primary teacher training is a consecutive course of one or two years after secondary education, and secondary teacher training is a consecutive course of one year after university graduation. This being the case, it is not possible for anyone who has taken the Teacher Training Certificate for primary teaching to move into secondary teaching except by qualifying for a degree. A trained primary school teacher with a high school certificate can take the B. A. degree either by private study or by taking correspondence courses; his teacher training course at the primary level does not entitle him to exemptions from undergoing the full B. Ed. course, but he can take the degree through a correspondence course and qualify for secondary teaching.

B. Ed. course through correspondence

The Correspondence course programme run by the Central Institute of Education, Delhi, from 1966 to 1971 for the degree of Bachelor of Education of the University of Delhi is described below to bring out its innovative features. The Regional Colleges also offer the correspondence courses. Points in which the two differ are presented to show that the differences in the organization and conduct of this programme are caused only by the factors governing the situation.

1. The syllabus, examinations and the awarded degree are the same as for the full-time institutional course.
2. The duration is 16 months - January to April the following year - while the institutional course is of 10 months' duration.
3. The candidate is required to attend a summer school of two months in addition to attending the Institute on Sundays, and other holidays. Attendance at these 'contact programmes' is compulsory.
4. Admission qualifications are a Bachelor's degree taken at one sitting with 45% marks or an M.A. Degree, and three years of teaching experience.
5. The course consists of three parts: theory papers, practice teaching and practical school assignments. Lectures are given on Sundays in the first two months, and then followed up by correspondence lessons, which are corrected with care on return. During the long summer vacation (May-June) an 8-week Summer School is organized. From July to December the students are engaged in three types of activities - writing responses to correspondence lessons, carrying out practice teaching and completing practical work assignments.
6. Practice teaching is arranged in the schools where they teach and includes discussion of lesson plans with their supervisors.

In the Regional Colleges, teacher educators and inspectors of schools are appointed in the different areas to provide supervisory guidance. In the Central Institute of Education, practical teaching includes observation of 25 lessons on the basis of prepared notes and the actual handling of 50 lessons (25 each in two elected subjects) after discussion of a few selected lessons with C.I.E. staff and a few others with school supervisors.

7. Sessional practical work consists of four different types of activities besides art and craft work.

   a) A critical study of a textbook in one of the methods subjects.

   b) A critical study of the incidence of truancy in the school.

   c) A critical analysis of one of the Question papers in one of methods subjects other than one in which assignment No. 2 has been submitted.

   d) Construction of two objective-based tests one in each of the two methods subjects :

      (1) Preparation and submission of test;

      (2) Administration of test;

      (3) Submission of report.

Problems are discussed in Tutorial Meetings held in the Central Institute of Education. Two essays along with the preparation of a 'scrap book', and psychology practice for handling tools and techniques of sample research, and of testing and measurement are required. Co-curricular activities include participation in literary, drama, or science clubs, and physical education. These are carried out generally in the Summer school, or in the schools where the teachers are posted.

M. Ed. part-time and vacation courses

The Master of Education course is offered as a part-time day course in the Jamia Millia Islamia Teachers' College in

Delhi. It enables teachers and educational officers in the neighbourhood who are free in the forenoons or afternoons to upgrade their qualification.

The National Institute of Education has been running a part-time evening course leading to the Master of Education (M. Ed.) degree at the University of Delhi. The duration of this course is two academic sessions while for the full-time course it is one academic session. The course is open to the teachers and educational administrators in Delhi.

The M. Ed. course in Karnatak University (Dharwar) is run during vacations. One has to attend two vacation courses per year, and complete it in two years.

Generally the M. Ed. course requires attendance on campus and the presentation of a thesis in partial fulfilment of the requirements for the degree. Some universities permit taking the degree by thesis only in the case of candidates who satisfy certain conditions. This has been availed of by many teachers in service who are working far away from universities offering the M. Ed. course (and is a striking innovation in concept that might be effectively emulated elsewhere).

Further education of trained teachers for updating

NCERT organizes through the NIE long- and short-term courses for teacher educators. As the NCERT has established Field Advisory offices in different States for improvement of school education and professional growth of teachers, it is now possible to organize local programmes easily. The local programmes are conducted generally through the State Institutes of Education. The Council also encourages teachers of higher secondary schools to initiate and report on research and experimental projects. Some selected reports are published in a book and circulated to the schools and to training institutions. The special institutions like State Institutes of Science Education, State Institutes of English and State Institutes of Hindi arrange courses for teachers in the respective subjects.

Refresher courses. State Institutes of Education (17 in number) organize short-term refresher courses for trained teachers in different subjects. The target is to reach every elementary school teacher by such courses at least once every five years.

A number of States like Kerala, Rajasthan, and Uttar Pradesh, have refresher training centres to provide facilities for the professional growth of trained teachers. Their main emphasis is on content and methods orientation in teaching in the light of recent developments. In some States like Gujarat and Maharashtra the idea of 'College of Education school complex' is gaining ground. In this, the College of Education becomes the nucleus for a score of neighbouring schools, and provides facilities for the professional growth of secondary school teachers.

Activities of extension centres: primary schools. There are 45 Extension Services Centres in the country which organize in-service programmes for the teachers of the primary schools. Each centre is housed in a teacher training institution, and works with a group of neighbouring schools, approximately 50 of which are selected with the purpose of carrying out a school improvement programme including the improvement of teachers working in these schools.

The Extension Centres were established in 1962 and were under the NCERT until early 1971. They are now with the State Departments of Education and are no longer financed by the Ministry of Education, although NCERT assists them whenever required. Academic programmes are organized by the State Departments of Education through the extension centres.

NCERT takes up developmental projects in collaboration with State authorities for the improvement of in-service programmes both for trained and untrained teachers. Following are some of the programmes:

1. Intensive School Development Programmes;
2. Total school improvement programme;

3. Ungraded units;
4. Encouraging experiments in primary schools;
5. Multiple class teaching;
6. Seminar readings (local level/state level); and
7. Preparation of indigenous material for Science.

Extension Centres - Secondary Schools. There are 102 Extension Services Centres or Units (smaller centres) for secondary school teachers. The number of centres in a State varies from one to another. The extension centres are attached to selected institutions for secondary training.

The extension centres organize orientation courses, seminars, workshops, short- and long-term training courses and school conferences in different subjects for the qualitative improvement of teachers as well as training in new methods and techniques.

The Seminar Readings Programme initiated by NCERT is carried out in co-operation with the State Department of Education and the Department of Extension Services in Secondary Training Colleges. This is an innovative approach to professional growth of teachers.

The objectives of the programme are: (1) to stimulate teachers and headmasters to write about the experiences they have gained and the knowledge they have acquired through experimentation in their work through study and analysis educational problems, and (2) to provide a means through which the results of experimentation and imaginative thinking by teachers and headmasters can be presented to other people for discussion and be made widely known among educators in general.

Papers are presented by teachers in meetings held in each State by the SDE; prizes are awarded for the best among them and they are sent to NCERT for inclusion among the papers to be considered for national prizes. Those which are selected for national awards are published in the book Teacher Speaks, and are sent to the schools free of cost.

National and State in-service education programmes in Delhi. To illustrate the national, State and institutional efforts at in-service education of teachers, and identify innovative practices, the activities of the following institutions in Delhi are described below.

National Council for Educational Research and Training (NCERT)

Department of Teacher Education

a) Courses. The Department has organized courses on Research Methodology, for the staff of the State Institutes of Education, and courses on elementary teacher education and three-month institutes for principals of primary teacher education institutions.

b) Conferences. The Department conducts half-yearly conferences of State Institutes of Education. These are held in different States. Other conferences held within the last few years include a conference on correspondence courses for elementary teachers and a conference of Principals of Colleges of Education.

c) Committees for research, and curriculum. Committees were formed to study, evolve or report on subjects like model syllabuses for elementary (primary) teacher education, secondary teacher education, professional courses, work experience and sessional work in teacher education.

d) Seminars. National seminars are held on topics like comparative education, student teaching and evaluation, revision of syllabuses and planning of research projects.

e) Workshops. National workshops are held on primary teacher education curriculum and the improvement of secondary teacher education.

f) Intensive Teacher Education Project. An intensive teacher education project to improve secondary teacher education has been conducted through seminars and workshops in selected areas like Kerala and Punjab.

g) Surveys. Surveys are conducted on different subjects like: books used in secondary training colleges, trained teachers in higher secondary schools, training programmes of colleges of education, status of elementary school teachers, teaching of languages in primary training institutions and the background and motivation of student teachers. Two national surveys, one on primary teacher education and the other on secondary teacher education have been conducted.

h) Publications. The reports of all seminars and workshops are printed and published, or brought out in mimeographed form, and distributed free.

Department of Secondary Education

This department (formerly the Department of Science Education) has prepared books on integrated science teaching and on each area of science for the high school grades. It has also prepared several teaching materials and films. It conducts seminars and workshops for teachers.

A mobile van fitted with three projectors - a 16 mm, a slide projector and a cassette 8 mm projector - and a generator 1.5 kilowatt, is stocked with a complete set of kits on primary science and middle school science, charts, a small library of 500 books, a set of hand tools and ancillary science equipment and a set of films. The mobile van has a working team of three people - a driver-cum-projectionist, a science graduate and a secondary grade teacher. Workshops are arranged in a central school to which 12 to 15 teachers from the neighbourhood are called. On the first day, the science teaching in the school is done by the mobile van staff

with the teachers observing. This forms the core of in-service education. On the second day the teachers enter into critical discussion of their observation. On the third day they are introduced to the higher content areas and training in the use of the tools. In the evening they draw up a programme of teaching for the next fortnight. The van, which would have gone to another centre in the meanwhile, has returned by this time. The main purpose of this workshop is to familiarize teachers with the use of improvised tools and materials in teaching science through the experimental approach.

State Institute of Education

The State Institute of Education, Delhi, was set up in 1966 to help in the task of qualitative improvement of school education. The functions of the S. I. E., as outlined by the Ministry of Education, Government of India are :

a) To improve the quality of pre-service education of teachers by organizing in-service education of teacher educators and by improving the courses of study in teachers' colleges;

b) To undertake in-service education of teachers and assist them to grow professionally;

c) To guide teachers in solving problems in day-to-day teaching by organizing suitable extension work in schools;

d) To prepare suitable professional literature for the use of teachers;

e) To undertake research in the problems which teachers have to face in class and provide them with possible solutions to these problems.

As the Directorate of Education at Delhi is mostly concerned with the provision and administration of secondary

education, the State Institute of Education now functions as its academic wing and was entrusted with the responsibility of improving the quality of secondary school education by improving the actual teaching in schools and by revising the courses of studies.

During the five years of its existence, the State Institute has organized a large number of in-service courses. The nature and duration of these have been largely determined by the needs of teachers. The revision of courses of study in mathematics and social studies for primary and secondary schools gave rise to the urgent need to provide suitable in-service education in content areas to teachers to handle the new courses.

As teachers could not be drawn from schools on working days and during working hours, it was decided to organize a Correspondence Course and arrange for contact classes on Sundays to enable teachers to get their difficulties in understanding the new concepts clarified by the tutors. The desire to make it a success has led to many innovations in the organization of the programme. The following content courses have been organized through Correspondence-cum-Contact Classes:

1 Courses in New Mathematics to prepare teachers for the revised courses in Higher Secondary classes (1968-69) and in History of Civilization newly introduced (1970). Lecturers from colleges affiliated to the University of Delhi assisted in writing lessons and also guiding the tutors who were selected from among those who had earlier attended the Summer Institute programme of the University Grants Commission. The Correspondence-cum-Contact Course was spread over a period of time to enable teachers to understand and grasp the new concepts and also learn the techniques to be followed. Contact classes were held on alternate Sundays to facilitate the organization of the course and allow teachers time to go through the lesson carefully.

2. Courses in New Mathematics for teachers of grades VI and VII for the middle school teachers in the Municipal Corporation schools. Three courses were held from 1969 to 1971 in which 400 to 600 teachers were enrolled each time.

A number of teachers who are called upon to teach Mathematics do not have a degree in the subject. It was therefore decided to reorientate them in order that they might handle the prescribed course. The first course was designed for teachers of grade VI. The lessons for this course were written by Field Advisers/Principals and Post-graduate teachers who had a good background of New Mathematics. The course consisted of 10 units of two lessons each and was attended by about four hundred teachers. The supervision of Contact Classes by competent persons was introduced to provide on-the-spot guidance to tutors in dealing with the difficulties of teachers who had an inadequate background of Mathematics. This was repeated in 1970 for another group of teachers. The third one was a course based on the syllabus prescribed for grade VII.

3. Courses in Geography for teachers of grades VI and VII were conducted on similar lines, covering the syllabus of one grade at a time. Great stress was placed on map work and the preparation of visual aids.

4. Courses in Mechanical and Geometrical Drawing for teaching higher secondary classes and in Art for middle school teachers were organized when it was found that a large number of students in Mechanical and Geometrical Drawing in the Higher Secondary Examination failed to achieve satisfactory standards. The first course was organized during 1969-70 in collaboration with the College of Engineering and College of Art. The second course was organized in 1970. Each of them was spread over a period of six months as the class could only be held on alternate days so as not to disturb the teaching schedule in the schools.

The need for an in-service course for Art teachers was identified by the Regional Art Counsellor in his visit to schools. Three courses were organized for them in 1968-1970.

5. Courses for English teachers and other language teachers. Lecturers of the State Institute of Education worked in collaboration with the staff of the Central (National) Institute of Education to organize short courses for teachers of

English for the first three years 1966 to 1969. Every year about one hundred teachers were re-oriented to the new approach to the teaching of English. It was decided to organize the first course for experienced teachers who could be trained as leaders and assist in re-orienting other teachers. A six-week course for about fifty post-graduate teachers of English was organized in February 1970 under the directorship of Prof. Bhandari of the British Council. Since then a number of courses of varying length have been organized for teachers of English in the middle grades with the help of leaders who act as tutors. The emphasis in the courses has been on the teaching of English by following the structural approach.

Courses for orienting Sanskrit and Hindi teachers of middle and higher secondary grades, for stressing the direct method of teaching through demonstration and the use of visual aids, have been held.

6. Courses for music teachers were conducted with the assistance of the Faculty of Music in the Delhi University.

7. Workshops in New Techniques of Evaluation were held for subject teachers with the assistance of experts from NCERT. Sample questions prepared by teachers were mimeographed and circulated to others for guidance.

8. Extension lectures were arranged for post-graduate teachers to help them to teach topics in the revised courses of studies. The lectures were delivered by faculty of different colleges of the University of Delhi and were followed by lively discussions.

9. Orientation courses were held for new teachers every year, and for principals, promoted or appointed, on their duties and responsibilities.

10. Four-week courses for the staff of the Primary Teacher Training Institute on techniques of teaching and problems of education have been organized.

11. Seminars on School Improvement Programmes for principals were organized in each zone to discuss the role of supervision, enrichment programmes for the gifted, and work experience in secondary schools.

12. Summer Institutes and conferences for supervisors have been organized for the supervisory staff of the Directorate of Education, Delhi, and the principals of Higher Secondary Schools, using University staff as resource persons to introduce the techniques of teaching New Mathematics.

13. Research has been conducted on many school practices and problems and the findings disseminated through mimeographed reports. One such study surveys the library facilities available to teachers of Higher Secondary Schools; another evaluates the school broadcast programme in English.

It will be noticed that the in-service courses conducted by the State Institute of Education are all need-oriented in their origin. Usually the candidates for a seminar may be from one zone of Delhi only. Transportation allowance is given to cover expenses. Resource persons are selected from the universities, NCERT, Delhi Administration and other appropriate institutions which have expert knowledge. Sunday being a holiday, the courses attract good attendance. Meetings are usually from 9 to 12 in the forenoon in 20 Centres located in different parts of the city.

Along with the State Institute of Education, there are three Science Centres in Delhi. These centres run in-service courses for teaching new science to pupils of grades VI, VII and VIII with stress on experimental approaches. The experiments are done in the classroom itself by the pupils. Teaching of Science through the experimental approach in the lower primary grades III, IV and V, is being tried in 50 schools to which science kits have been distributed.

INDONESIA

General background

Educational system. Education in Indonesia is the responsibility of the Ministry of Education and Culture. Directly under the Minister of Education is the Secretary-General of Education and under him are the Director-General of Education, Director-General of Culture, the Director-General of Youth and Sports and the newly organized (1969) Office of Educational Development. Under the Director-General of Education are the following units headed by a Director: Pre-School, Primary and Special Education; Staff and Teacher Education; General Education; Vocational and Technical Education; Higher Education; and Student Affairs. The newly created Office of Educational Development (Badan Pengembangan Pendidikan or BPP) is assuming increasing responsibility for the in-service education of teachers.

Primary school teachers are trained in SPG (Sekolah Pendidikan Guru) institutions which are administered by the Director of Staff and Teacher Education. There are at present 197 government SPG's in the country. Secondary school teachers are trained in IKIP (Institut Keguran dan Ilmu Pendidikan) institutions which are administratively under the Director of Higher Education.

There are also church schools in Indonesia some of which receive subsidy from the Government. The teachers in these schools usually come from SPG and IKIP institutions operated by the church. Graduates of these church teacher training schools must pass the government examination in order to be certificated as teachers. These examinations are the same for all graduates of teacher training schools, Government or non-Government.

The IKIP is the only institute for higher education in teaching and educational sciences that is entitled to confer

degrees. This institute serves as a pre-service as well as an in-service training institution.

Universities in Indonesia do not, as a rule, prepare teachers for the primary or general secondary schools. The universities with faculties of education train educational scientists; the graduates often are appointed to offices in the Ministry of Education or are recruited as lecturers in the faculty.

There is a movement to change the status of the IKIP, and to merge it within a university so that it may become a college of education; this change, however, is still at the initial stage.

Recruitment policy. The present standard qualification for teachers in the primary schools is graduation from SPG (Sekolah Pendidikan Guru). Students enter the SPG after completion of the Junior High School, or 9 years of schooling. The course is of three years' duration, the same number of years as the Senior High School. However, more than half of all the teachers in the primary schools at present are still graduates of the SGB, a one-year course after the Junior High School, or a four-year course after the primary school. In remote villages there are still teachers who are just graduates of the Junior High School. Programmes to upgrade these semi-qualified and unqualified teachers are in operation.

Teachers who are fully qualified to teach in the Junior High School are graduates of IKIP (Institut Keguran dan Ilmu Pendidikan), a three-year course taken after the Senior High School and with a curriculum leading to the B. A. degree. There are still many teachers in the Junior High Schools, however, who are graduates of SPG teacher training institutions. These are now being trained in nation-wide upgrading programmes.

For teaching in the General Senior High School one must be a graduate of IKIP with an M. A. degree. This is a two-year course taken after the B. A. in the same institution. Many teachers in the Senior High Schools are only holders of the B. A. degree and they are being upgraded through special in-service programmes.

The standard qualification for teachers in the Technical and Vocational Schools is graduation from the Technical Institutes, but many teachers lack this qualification.

Programmes are organized for the professional improvement of trained as well as untrained teachers and a specially appointed sub-division in the Department of Education (Dinas Penataran dan Panjegaran - Division of Upgrading and Retraining) is responsible for the basic policy and the co-ordination of all in-service programmes for teachers carried out by the provincial and local bureaux of education.

A teacher's salary depends on several factors: (a) qualification diploma; (b) position, school level; (c) length of service.

A teacher in the same school with fewer years of service but with a higher diploma can earn a higher salary than his colleague with a longer term of service but with a lower diploma. Thus the salary scale and the different qualifications for teaching at different school levels are motivating factors for teachers to improve themselves.

By earning higher qualifications while in service, a teacher can help himself to be promoted to a higher salary scale, or selected to teach at a higher school level, which also means a higher scale in salary.

Organization of programmes for further education

In-service education for elementary school teachers is carried out on the provincial and local level.

Upgrading programmes are designed to help unqualified teachers to obtain the required qualifications.

Refresher programmes are intended for maintaining the proficiency level of the teachers and for keeping them abreast of changes and progress in knowledge and technology related to teaching.

Programmes for raising teachers' qualifications

1. Unqualified elementary (primary) school teachers (untrained teachers) have to take a correspondence

course of from one to three years with occasional (usually monthly) oral instruction, and then undergo an examination to get the teaching certificate.

2. Underqualified primary school teachers (i.e., those with temporary qualifications) have to take a correspondence course of similar duration with additional oral courses (usually monthly) or, in the cities by means of regular afternoon/evening courses. Those courses are usually attached to a Teacher Training School, through which the untrained teachers are upgraded. The correspondence or regular courses have a programme equivalent to that of the Teacher Training School.

3. Qualified primary school teachers have two options: (1) attend a one-year course (in the afternoon or evening) to get a temporary Junior High School teaching certificate (this course is usually attached to a selected Teacher Training School); (2) attend courses at the IKIP for the Bachelor's degree, through afternoon courses or with special permit to follow the regular courses.

The teachers do not get any financial compensation for attending those programmes and must pay the fees and meet all other necessary expenses.

Refresher programmes are carried out on national, provincial and district or local level, according to the status and position of the participants. For primary school teachers it is usually in the district or local level, by means of: meetings, seminars, workshop, and lecture sessions by resource persons. The basic plan and general outline of those activities come from the central department or the provincial burcau while the execution is delegated to the appropriate lower levels.

The basic policy, co-ordination and general evaluation is the responsibility of a subdivision of the Department of Education. The conduct of the training courses is with the provincial and local bureaux of Teacher Training and the

provincial and local bureaux of the elementary schools or of Teacher Training Schools.

When a new orientation is given to subjects in the curriculum or new subjects are introduced, the practice is to organize in-service education for giving the required competencies to teachers. Subject-areas covered by the in-service programmes include:

- Languages (Bahasa Indonesia and English)
- Methods of teaching
- Guidance and counselling
- Evaluation and measurement
- Population Education
- Textbook writing
- Educational administration and school management.

There are many pilot projects (aided by Unesco or UNICEF) organized for introducing new curricula. Important among them are:

- Comprehensive School Project
- Project on programmed learning
- Population education
- Teaching English
- Industrial Arts

Types of in-service programmes

Pilot projects are usually organized and supervised by the central bureau (Department of Education) and the operation carried out by an appointed central committee, or sometimes delegated to an IKIP and in some cases to a provincial committee under the provincial representatives of the Minister of Education. Other in-service programmes are usually organized by the several IKIP's and by the provincial supervisory bureaux.

The programmes of further education organized by the central Department and carried out by a central committee are usually located in specific training centres. The programmes under the supervision of an IKIP are organized and

carried out in the IKIP campus, (usually the IKIP's in Bandung, Padang, Jakarta). The programmes organized by the Provincial Supervisory Bureaux are usually held in the provincial capital.

The qualifications of participants are determined according to the kind of in-service programmes; e.g., teachers in special subjects; guidance and counselling officers; principals and school administrators. The selection is usually delegated to the respective supervisors and responsible administrators (Principals, Heads of divisions, Deans). The staff and resource persons are selected from among the faculty of the IKIP's or are prominent officials (Heads of divisions, Inspectors, etc.) with an acknowledged academic background and specialization.

No fees are collected from participants. Participants are usually freed from the workload during the course. Financial incentives are usually not given; but the participants generally get travel expenses and free accommodation and food.

Opportunities of further education other than the above mentioned in-service programmes are not yet extensive. Some IKIP's have tried to help the teachers in service by organizing evening and Sunday courses and on the basis of the extended credit system. To get the Bachelor's degree for example, students must earn 100 credits (semester hours) that can be accumulated within an extended period of 4-6 years in place of the three years regular study period.

The students/participants need not always go to the campus for attending the courses. Branches (extension courses) are set up in many cities where the lecturers go to teach at definite times (every fortnight or monthly).

In-service education for upgrading qualifications

An extensive programme of further education of teachers in service is organized with the principal goal of increasing the academic and professional preparation of the teachers. This is done through regular curricular courses leading to the standard qualification for those who are not as yet fully

qualified and toward the next higher certificate, diploma or degree for those who want to teach in the next higher level.

The graduates of the SGB course (6+4 or 6+3+1) were certificated to teach in the primary schools up to 1964. After this year, however, only graduates of SGA (6+3+3) were considered fully qualified to teach in the primary schools. The SGA were later converted to SPG schools for teachers in the pre-school, primary and special schools for handicapped children. At present, however, only about 25% of the more than 300,000 primary school teachers are fully qualified. The rest are graduates of the old SGB course and some untrained teachers in the remote villages who were taken in after finishing the Junior High School.

One of the targets of the in-service education programmes, is the group of graduates of the SGB course (6+4 or 6+3+1) in order to bring them up to the SPG level (6+3+3). This is done through the regular courses in the SPG schools in a two-year KPG special programme. Generally, the teachers teach in the morning and go to an SPG school in the afternoon. The subjects are taught by the regular teachers of the SPG who receive a small honorarium for their services. Examinations are given twice, at the end of the first year and the second year. These examinations cover all the subjects and are the same as those given to the regular SPG students. The successful completion of the course leads to the SPG certificate. The teachers in service who enrol in the KPG course pay a monthly fee of 200 rupiahs a month. The regular students pay 300 rupiahs a month. Classes are from Monday to Friday and there are usually 30 teacher-students in a class.

Graduates of SGA and SPG schools who are fully qualified to teach in the primary schools may upgrade their academic and professional education to enable them to teach in Junior High School. This can be done by taking extension courses in the IKIP off-campus branches located in a zone or district. Regular teachers in the mother institute teach the subjects and receive a small honorarium (the equivalent of US $0.20 per hour). The course leads to the B.A. degree. A subject is given for three semesters of 40 weeks. If the

subject calls for laboratory work, the third semester of 4-5 weeks is spent at the mother institute. Saturday classes are from 8:00 in the morning to 5:00 in the afternoon with a one-hour lunch break. The syllabus is the same as that of the regular IKIP course with adaptations to the needs and experiences of the teacher-students. The SGA and SPG graduates who have been drafted to teach as emergency teachers in the Junior High Schools have to take this upgrading course in order to get permanent appointments. Teachers who enrol in these courses pay a fee or contribution of 1,500 rupiahs.

Teachers in the Junior High Schools who hold a B.A. degree may also upgrade their academic and professional qualification to enable them to teach in the General Senior High School. This is done by taking the two-year course in IKIP leading to the M.A. degree. Also, teachers in the Senior High School who only hold a B.A. degree must take the two-year M.A. course in order to be given permanent appointment. Teachers who have to teach subjects other than those in their area of specialization must take additional courses in the IKIP to raise their qualification. These subjects are offered in extension centres on Saturdays, and are financed from student fees and grants by the county government.

In-service education for updating knowledge

National-level programmes. In addition to the regular course work offered at the SPG and IKIP institutions to teachers in service, seminars and workshops at different levels of varying duration are organized for them. The Ministry of Education also sends a number of teacher educators and teachers to participate in regional and international conferences, workshops and short courses.

The critical mass programme. National-level seminar/workshops under the so-called 'critical mass programme' are generally organized by the Office of Educational Development (Badan Pengembangan Pendidikan) and the Directorate of Staff and Teacher Training wherein key teachers from the different regions or districts are brought together for short periods to upgrade their competencies in specific subjects

such as Biology, Modern Mathematics, Bahasa Indonesia and Science. These key teachers go back to their institutes, schools or regions and are expected to conduct similar upgrading programmes for other teachers of the subject. Resource persons for these national level seminar/workshops are drawn from personnel in the offices under the Ministry of Education, from the faculties of the universities and institutes, as well as the foreign consultants in the country. In addition to their regular salary, the participants are given free transportation, free quarters and meals and materials needed in the seminar or workshop.

Textbook writing project. An innovative programme for further education of teachers in service is the on-going project of writing textbooks and other reading materials for the primary and secondary schools. Under the sponsorship of the Office of Educational Development with financial and professional assistance from UNDP, Unesco, UNICEF and other international organizations, education personnel in the Ministry of Education and key teachers in the various subjects are brought together to write textbooks and other reading materials for use in schools. These book writing sessions may last a few months. The materials prepared are reviewed by competent educators before they are printed for use in the schools.

Teachers from private schools are allowed to join these book writing groups but must pay a fee to defray their camp expenses. Some private schools send some of their teachers to work with the book writing groups, as the experiences the teachers acquire through book writing enhance their knowledge of subject matter and stimulate initiative and resourcefulness in the use of local materials in their teaching. These benefits spread over to their whole school and to the schools in their districts.

Local level programmes organized by training institutions. Individual teacher training institutes also organize in-service education programmes. An example of this is the upgrading course held at IKIP Bandung from 15 April to 22 May 1970 for selected teachers and administrators of SPG schools including elementary and secondary school inspectors as well

as head inspectors in West Java. This was primarily a refresher course and the programme of activities included Educational Administration for the principals, assistant principals and the head inspectors and inspectors. Methods of teaching were also emphasized in the different subjects such as Social Science, Mathematics, Natural Science, Fine Arts, Home Economics and the Indonesian Language. The unit method of teaching was given special treatment and the participants prepared unit lesson plans showing interrelation and correlation of different subjects and tried these in actual classes in the nearby schools. Evaluation techniques and instruments were used. The participants were also taught the use of A-V materials and equipment. The professional staff were the regular faculty members of IKIP Bandung and some lecturers in the Institute of Technology located in the same city. This regional seminar was financed jointly by UNICEF and the Indonesian government. A similar seminar was held in 1971 for a comparable group from Central and East Java.

IKIP Bandung through its several departments is conducting upgrading courses for teachers in the Junior High Schools as well as for those who are teaching in the Special Technical/Vocational secondary schools. Much attention is being given to the teaching of English, Bahasa Indonesia, Physics, Modern Mathematics and Biology. This teacher training institute has also initiated a programme to upgrade librarians in the elementary and junior and senior high schools.

Local level programmes organized by local inspectorates. Seminars and workshops are also organized in the local districts by the local inspectorate. The professional staff for these local upgrading courses are those who have participated in regional and/or national seminars or workshops. Teachers in the SPG and IKIP institutes in the region are usually invited to take part.

The Teachers' Union of the Republic of Indonesia. An innovative approach to the further education of teachers in service is the project of the Teachers' Union of the Republic of Indonesia (Persatuan Guru Republik Indonesia). The Teachers' Union is unique in that it organizes and operates

teacher training institutions. Fourteen SPG and five IKIP have been set up by PGRI, although some of these have since been taken over by the Government. The Teachers' Union is affiliated with the World Confederation of Organizations of the Teaching Profession (WCOTP) and with the International Federation of Free Teachers' Union (IFFTU). Through these world organizations, the Teachers' Union of the Republic of Indonesia (PGRI) organizes seminars and workshops with some assistance from member organizations. Recently PGRI organized a seminar for teachers in service which was jointly sponsored by the Union, the Department of Education, Department of Manpower, IFFTU and Friedrich Ebert Stiftung.* A workshop was also organized by PGRI and jointly sponsored by the Union, Department of Education and the Canadian Teachers' Federation. The Union is now planning a seminar/workshop with the assistance of the Australian Teachers' Association.

New developments. Teacher training institutes may organize in-service training courses for their teaching staff, if a proposal called "A Plan for the Training of the Teaching Staff of the Institute for Teacher Training and Education in Instructional Technology" which is before IKIP Jakarta is adopted. The plan is comprehensive and consists of seminars and workshops. The central theme will be the impact of scientific and technological developments on education in general and classroom activities in particular, such as teacher-student communication; the relationship between educational technology and child development theories; theories of learning and instruction; and the selection, use and evaluation of instructional materials.

In "A Programme for the Introduction of Educational Broadcasting in Indonesia" prepared by Mr. Jusufhadi Miarso of the Office of Educational Development, November 1970, plans have been proposed to upgrade primary school teachers through radio programmes. The objectives:

1. to disseminate information from the Ministry of Education to teachers;

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* A Foundation of the Federal Republic of Germany.

2. to provide communication channels that enable teachers and administrators alike to share and solve problems and ideas;
3. to present current events and new ideas in education, science and technology, etc.;
4. to act as a reminder of the tasks to be done and techniques to be observed;
5. to raise teachers' mastery of what they teach;
6. to help teachers in the subjects that give them the greatest difficulty.

The plan to establish eight pilot comprehensive schools in the country entails improving teachers as well as making curriculum revision for pre-service training of teachers for this type of school. Several teams have already gone abroad to visit and observe the operation of comprehensive schools; although the concept as adopted in Indonesia is not the same as that of the comprehensive high schools elsewhere. Starting in 1972, teachers in the laboratory school of IKIP Jakarta are undergoing in-service training to prepare them for their function in one of the eight pilot schools. At the same time, some revision will be made in the pre-service curriculum to prepare teachers for the comprehensive schools. Should the comprehensive school concept be adopted on a nation-wide scale, programmes to train teachers in service in the primary and secondary schools in the new approaches will be instituted.

Universities are now beginning to participate in some of the activities and projects of teacher training institutes. University professors serve as resource persons and lecturers in the programme of IKIP to upgrade teachers in Mathematics, Physics and Biology. Laboratory facilities in the universities are also made available to the participants of in-service training courses. In curriculum development, university professors are members of IKIP committees. Their involvement in in-service training, however, is only a response to the demand made on their superior resources, personnel and material. Clearly, greater involvement of the universities and

institutions of higher learning in teacher education generally and in-service education of teachers in particular is an objective which has yet to be achieved. It is hoped that the programme of a Consortium of Higher Education for the qualitative improvement of higher education in Indonesia, which includes teacher education, will contribute to the fulfilment of this objective.

IRAN

General background

The educational system. Starting from the academic year 1966-67 a new pattern of education was introduced in Iran. The new system consists of three cycles of schooling. The first cycle is primary education, which is compulsory, universal and free with a duration of five years, admitting children at six years of age. The second cycle is the 'guidance cycle' of three-years' duration for children of 12-14 years. The third cycle is secondary education with a duration of four years for pupils of 15-18 years of age. Secondary education is divided into two branches, academic and vocational, each of which is divided in the last two years into more specialized fields of study.

New curricula have been introduced for the new system of education. The elementary school curriculum aims, in addition to teaching the basic subjects, at helping the children to develop an understanding of their communities and adjust themselves to the environmental conditions in which they live. The guidance cycle is directed toward increasing the knowledge of pupils in the various subjects as well as discovering their talents, interests, abilities and aptitudes for academic or vocational studies. Its main emphasis is on providing the pupils with a variety of academic and practical experiences in order to enable them, under the guidance of their teachers and counsellors, to decide upon their future studies and eventual occupations. The third cycle aims at helping pupils to pursue either academic or vocational education in accordance with their abilities, aptitudes and achievements, as demonstrated in their schooling in the second cycle and in the provincial examination given to them at the end of that cycle.

Along with the revised curriculum for each cycle, appropriate textbooks and teachers' guides are prepared, and

better methods in teaching and counselling are adopted in order to achieve the objectives formulated. The new orientation given to the existing curricula has considerable implications for teacher education. The Ministry of Education in collaboration with staff members of colleges of education and teacher training centres made an evaluation of the entire system of teacher education in the country. In the light of the findings of this evaluation and the new orientation given to the objectives and curricula of the educational system, fundamental changes were effected in pre-service and in-service programmes of the teacher education institutions. New standards in curriculum organization and qualifications of students and staff members, and in longer duration for the training courses have been introduced in order to raise the standard of education in the teacher training centres and hence to cope with the requirements of the new educational system.

Recruitment policy. All institutions for preparing teachers for the three levels of education are administered, supervised and financed by the Ministry of Education, the Ministry of Science and Higher Education or the universities. The Ministry of Education is responsible for preparing teachers for the elementary and guidance cycle schools. The Ministry of Science and Higher Education, in close collaboration with the universities, is in charge of producing teachers for secondary schools. The statutory qualifications prescribed for the recruitment of teachers are set by the two Ministries.

Statutory qualifications required for recruitment of elementary school teachers. At present, three types of teaching certificates given by the teacher training centres qualify teachers for elementary schools.

1. A certificate given by the Tribal Teacher Training Centre to students who enter it with an elementary school certificate to undergo a one-year course. Only students from tribal communities are selected; they are expected to return to teach in their communities.

2. A certificate awarded by the Rural Teacher Training Centres. The admission requirement is nine years

of formal schooling; and the duration of the course is one academic year, after which those who have graduated can participate in in-service programmes organized during three summers, each course being of three months' duration to upgrade their qualifications. Teachers graduating from these centres are expected to serve in schools situated in rural areas.

3. A certificate awarded by the Normal Schools, mostly situated in cities. The requirement for admission is nine years of formal schooling and the duration of the course is two years. Graduates from these schools are expected to teach in cities and towns.

Prior to 1970, two types of certificates were given by the teacher training centres for girls. The first was awarded to students with a secondary school certificate who took a one-year course in teacher education; the second was given by the Rural Teacher Training Centres for Girls to students who had completed only primary school.

With the introduction of the new education system in Iran the Ministry of Education is gradually introducing in all teacher training centres for primary schools a new two-year programme, for which the minimum admission requirement is nine years of formal education for both boys and girls whether they are to teach in rural or urban communities.

Statutory qualifications required for recruitment of teachers for the guidance cycle. In accordance with the new education system introduced on a year-by-year basis since 1966-67, the first enrollees in grade VI of guidance cycle were admitted in the academic year 1971-72. The minimum qualification for teaching in the cycle is the Certificate of the Guidance Cycle Training Centres. Holders of secondary school certificate are admitted to these centres provided they pass a competitive entrance examination. The duration of the teacher education programme in these centres is two years. A student teacher specializes in one of four groups of subjects: science and mathematics, social science and Persian language, foreign languages, and pre-vocational subjects. Common courses like the professional foundation course, principles of

guidance and counselling, Persian and foreign languages, religious instruction, arts, physical education, and student teaching are required for all student teachers regardless of their specialization.

Statutory qualifications required. Teachers recruited for secondary schools should have a minimum qualification of a bachelor's degree in education. These teachers are prepared in the National Teacher Training College at Teheran and other Colleges of Education attached to universities. Admission is given only to secondary school certificate holders who must also pass a competitive entrance examination. The duration of the course is four years for the bachelor's degree in education either in science or in the arts field. Graduates of the universities (other than the four colleges of education) who desire to become qualified teachers have to undergo a one-year teacher education programme leading to a Teaching Diploma. In the colleges of education, student teachers are required to attend general and foundation courses and specialize in one of these subjects: Persian literature, foreign language (English or French), history, geography, mathematics, natural science, physics, chemistry, philosophy of education and guidance and counselling.

Recruitment and training of Education Corps for rural areas. In order to provide opportunity for adult villagers and children to be educated and to speed up the process of rural development, a revolutionary innovative approach was adopted in 1962. This was the Education Corps. Graduates of secondary schools, in lieu of compulsory military service were assigned to rural areas to teach adults as well as children. The basic assumption was that economic and social change would not be effective in agricultural communities unless education was provided to make the rural inhabitants aware of their conditions and devise means and ways for their improvements. The Education Corps has tested this assumption in the last ten years, with results which are demonstrably successful.

On joining the Education Corps, the candidate is given six months of intensive training in one of the Education Corps

centres located in different parts of the country. The programme is divided into two main parts. The first is military training which covers one third of the programme. The military training is largely an effort to instill discipline, build up physical fitness and inculcate esprit de corps. The second part, which covers two thirds of the programme, consists essentially of providing basic knowledge in general education and methods of teaching subjects in elementary schools for children as well as for adults with emphasis on functional literacy. In addition, they are given general orientation in rural community development, public health and sanitation, and functions of organizations and government services in villages. At the end of this crash programme the volunteers sit for an examination to assess their understanding and achievements.

After completing the six-month course in a centre, the education corpsmen are sent out to villages to serve for 18 months. At first the corpsman is introduced to the village leaders and gets acquainted with the economic, social and educational conditions of the village. Then he takes up his duties of teaching children in school, especially in the first three grades, as professional teachers are mostly responsible for the higher grades. He is expected to be in constant contact with parents to offer guidance and minimize children's dropping out from school. In the afternoons and evenings, he is to organize functional literacy classes for adults. In addition, he participates in community development projects and activities. The corpsman is thus an agent for introducing change in the village community through education and his cooperative efforts with the village leaders and officials.

Over 80% of the first group of education corpsmen who finished their terms of service in the villages were recruited as permanent teachers in the Ministry of Education. With subsequent groups over the years, the number has remained over 50%. Thus, the Education Corps has provided the Ministry with a steady stream of thousands of new teachers available for the expansion of school enrolment in elementary education. The policy of the Ministry is to strengthen the Education Corps programme in rural communities. Thus,

every year an evaluation is made of teachers who were originally recruited from the corpsmen in order to recommend them for enrolment in the Teacher Training College at Mamazan for a four-year course of higher education in order to be prepared as supervisors and counsellors for the rural areas.

In the academic year 1969-70 there were over 8,695 Education Corpsmen and 1,355 Education Corpswomen teaching in 8,147 schools comprising 518 regular classes and 9,532 multigrade classes. The number of pupils attending these classes totalled 321,239, 20% of whom were girls.

Teachers' qualifications. The Ministry of Education does not recruit untrained teachers for its rural schools (The Education Corpsmen having undergone a crash training programme for six months). Through on-the-spot training, workshops and seminars organized for the Corpsmen in the field, the Ministry is able to improve their professional qualities in teaching in rural areas.

In 1969-70, the total number of the instructional staff in elementary education was 85,224 of whom 45% were women. Only 1% of the staff held university degrees, 79% had a secondary school diploma and the remainder less than secondary school education. Out of the total figure, 55% had graduated from either normal schools or from the one-year teacher training centres. The total number of teachers who had been teaching on full-time or part-time basis amounted to 74,613, and they made up 83% of the schools' staff in cities and 95% of it in rural areas; the remaining were school principals, vice-principals and other administrative personnel. 6,123 teachers were either temporary or on probation. At the secondary education level (first and second cycles) there were in 1969-70 a total of 24,828 instructional staff; 18,352 male and 6,476 female. Out of this number, 78.7% were teaching in classrooms and the remainder were principals and other administrative personnel. 44.2% of the instructional staff were holders of university degrees, 49.8% graduates from secondary schools or from teacher training centres, and 6% had qualifications lower than a secondary school certificate.

Organization of further education of teachers in service

The administrative and financial affairs of the Ministry of Education were, for years, highly centralized. Further education programmes for teachers in service were mostly planned, financed and supervised by the Ministry of Education. These programmes were usually organized in Teheran, or the capital cities of the provinces and the educational districts under tight control of the Ministry. In February 1970 a law was passed by the Parliament by which many of the responsibilities of the Ministry were decentralized to local and regional authorities. In 1971 a total of 52 regional councils were set up. In 1972 the number of these councils was to reach 102, nearly completing the decentralization. Under this scheme autonomy is given to the regional councils to organize teacher education programmes for raising the qualifications and updating the professional knowledge of teachers in the field in accordance with the local needs. In this process of decentralization, the Ministry of Education collaborates with these councils, and provides them with the necessary guidance and advice in planning and implementing programmes for the in-service education of teachers.

At the Ministerial level there is a department of teacher training responsible for planning and organizing programmes for further education of teachers in service at each level: the Department of Primary Education, the Department of Guidance Cycle Education, the Department of Secondary Education and the Office of Teaching Exceptional Children. Each of these departments has a budget and personnel for arranging in-service education programmes for its teachers.

The programmes organized by these departments and offices in co-operation with the department of teacher training are short, lasting from one to four weeks, although in some cases they may be lengthened. All short-term in-service teacher education programmes are financed by the Ministry and no fees are paid by participants. In addition, the participants are given travel allowances during the period they participate in the programmes.

Organization of further education

The introduction of the new educational system together with the complete revision of the curriculum and textbooks made it incumbent on the Ministry of Education to carry out a long-term and short-term plan for retraining the teachers in service in all levels. At the primary education level, two main programmes were organized; one was to provide refresher courses for teachers locally, and the other was to hold seminars and workshops for principals and school supervisors. The chief aim of these refresher courses, seminars and workshops was to acquaint the teachers in service and administrators with the new curriculum, textbooks and methods of teaching. At the Guidance Cycle level, the Ministry in 1970 established new teacher training centres for two years' teacher training following the secondary school certificate. In the meantime, the Ministry with the provincial and local authorities have been organizing intensive courses during the evenings and summer vacations to upgrade the teachers to the required level of two years of teacher education after secondary school certificate. In addition to these intensive courses, seminars and workshops are being held in Teheran and the provinces for teachers in service, principals and school administrators for a period ranging between one and two weeks for the purpose of orienting them with the new changes introduced in the curriculum, and increase their competence in guiding pupils to select future occupations. In-service teacher education programmes are also organized in the National Teacher Training College at Teheran to train qualified counsellors in order to be able to guide and direct all activities concerning testing and educational guidance in this cycle. At the secondary level, programmes for teachers in service take place in colleges of education at Teheran University and other universities in the provinces.

The policy of the Ministry of Education and the Ministry of Science and Higher Education is to systematically update the qualifications and, at the same time, to provide well-planned and intensive refresher courses, seminars and workshops to help teachers in service in getting acquainted with the new system of education. These programmes are geared to the requirements of the revised curriculum and newly prepared textbooks for each grade of schooling.

Iran

The introduction of the new system of education has resulted in establishing or strengthening a number of national centres and institutes by both the Ministry of Science and Higher Education, and the Ministry of Education for the purpose of introducing reforms and carrying out research studies for curriculum improvement, as described below.

The Institute of Research and Programming Science and Education was recently established in the Ministry of Science and Higher Education. It consists of three centres; namely, the research centre, the documentation centre, and the books and publication centre. The objectives of the Institute include carrying out research in the areas of science and education, setting policies for education in sciences, collecting and processing data related to sciences and education, and disseminating the results of research projects in science and techniques. Considerable attention is given by the Government to introducing experimental science and new mathematics in the schools. Innovative techniques are tested and suggested in the teaching of science in all stages of education. Programmes for teachers in service are being organized to acquaint them with such techniques.

The School Textbook Organization in the Ministry of Education is mainly responsible for preparing, producing and distributing the textbooks and teachers' guide books prescribed by the Ministry. Teachers in service attend seminars and workshops and are advised on the content and the proper use of textbooks and teachers' guide books prepared in line with the new curriculum. The Centre for Educational Publications is in charge of preparing reading materials in the form of weekly magazines, pamphlets and supplementary books in order to help the children to form the habit of reading and undertaking independent studies.

The Research and Curriculum Development Centre is mostly responsible for carrying out research studies in the prescribed curricula in the schools, introducing changes in the curricula for improvement, and suggesting innovative techniques in methods of teaching the improved curricula.

The Centre also has the responsibility for making the curricula for the teacher training centres in collaboration with the Department of Teacher Training. In addition, it conducts evaluation research in selected experimental schools to find out to what extent the execution of the content syllabuses in each grade was successful from the quantitative and qualitative points of view. In the light of the observation, testing and returns, the Centre recommends possible changes to be introduced in the curriculum, in revising the textbooks and teachers' guides, in using visual aids, and in suggesting emphasis to be placed upon certain techniques in training teachers in the in-service education programmes.

Types of in-service programmes

In Iran there are a number of programmes for furthering the education of teachers in service at all levels with different durations, ranging from one week to three months. They may be held during summer vacations or in evening sessions. These programmes are mostly organized in the teacher training centres situated in Teheran and the provinces. All programmes organized for teachers in service are financed by the Ministry of Education, or regional and local councils. They are provided for the participants free, and in many cases the government gives them travelling allowances if the programmes are held away from their schools.

In addition to the current, standardized pre-service programmes of two years after nine years of formal education, the Ministry has been pursuing a policy of ensuring that all teachers in service who do not have the prescribed qualifications should be given the opportunity for upgrading their academic qualifications. For the guidance cycle, a standardized programme of pre-service education of two-year teacher education after secondary school certificate has come into force since 1970. For secondary schools, the requirement of certification is four years of teacher education after the secondary school certificate.

Further education of teachers in service includes, in addition, training in the innovative techniques and the new curriculum programmes, new methods of teaching science and mathematics, and in use of Educational TV programmes and audio-visual materials.

Incentives for further education. The intensive courses for teachers in service organized through evening sessions and summer vacation sessions in normal schools, teacher training colleges, and colleges of education help participants to obtain higher certificates, diploma and university degrees in teacher education. Those who acquire higher qualifications during their service are promoted to a higher salary scale. It is evident that this system of incentives has been motivating a large number of teachers in elementary, guidance cycle and secondary schools to attend in-service teacher education courses.

Attendance at short-term in-service programmes like seminars, workshops and conferences organized for teachers to update their knowledge and learn new methods of teaching do not lead to any salary increments. Travel allowances are however provided to participants. Scholarships and travel grants are mostly offered to teachers who have attended in-service programmes and shown outstanding performance in teaching in their schools.

In-service programmes for upgrading qualifications of teachers

Primary level. An intensive and systematic training course is in operation for upgrading the qualifications of the semi-qualified teachers who have graduated from the tribal and rural normal schools. Those schools admitted students with six years of formal schooling and provided them one to two years of pre-service teacher education. Teachers who had graduated from these schools are given the opportunity to upgrade their qualifications after serving a number of years in teaching. First they have to obtain the certificate of the first cycle of secondary education which is given after completion of nine years of formal schooling as private students.

They then attend in-service courses held during evening sessions which are mostly conducted in their normal schools. After attending these intensive courses they are allowed to sit in the final examination provided for the students of teacher training centres which provide two years of teacher education after nine years of formal schooling.

The rural teacher training centres admitted students for one year of pre-service teacher education after nine years of formal schooling. In order to upgrade the qualification of the teachers graduating from these centres to two years of teacher education, the Ministry of Education, in collaboration with the provincial education offices, organize intensive in-service programmes during the summer vacations. Teachers in service are required to attend these programmes for three consecutive summers after which a higher certificate in teacher education is awarded to them.

Guidance Cycle Level. The Ministry has recently established 15 teacher training centres for preparing qualified teachers for the guidance cycle. In 1971-72 the number of teachers required for the guidance cycle schools was 11,000 and only 2,800 graduated from these teacher training centres. Therefore, it became necessary to recruit 9,200 teachers from among those who normally teach in elementary schools. A special programme for intensive in-service training through providing evening courses is at present organized in 12 centres.

In December 1971 a countrywide entrance examination was given to recruit about 10,000 teachers for the guidance cycle. A competitive entrance examination was held for teachers in service, mostly in elementary schools, who had taken the secondary school certificate. The entrance examination included tests in general knowledge, foreign languages, and Persian language and literature. After selection, teachers are to undergo three years of intensive teacher training, attending classes either during summer vacations or in the evening. The teachers are required to attend between 1600 and 1800 hours of study during the three-year in-service programme in order to be eligible for obtaining the same certificate offered to regular students who complete two years of

studies in day teacher training centres for the guidance cycle. All participants should, apart from taking the general and professional foundation courses, specialize in one of four groups of subjects: science and mathematics, social sciences and Persian language, foreign languages, and pre-vocational subjects.

These intensive in-service teacher education programmes are provided free of tuition charges. Teachers who are stationed in schools located at a distance from the guidance cycle teacher training centres are given the option to participate in the summer vacation courses. Others are enrolled in evening classes.

Secondary school level. The National Teacher Training College at Teheran, is an autonomous body with its board of trustees. It is mainly financed by the Ministry of Science and Higher Education. The National College provides three main types of teacher education courses. The first is a programme of pre-service education for four years after the secondary school certificate. Graduates of this programme are awarded the Bachelor's degree in education. The second type is an intensive programme for secondary school teachers, counsellors and administrators for a period of two academic years, after which the participants obtain the master's degree. The third type is organized in collaboration with the Ministry of Education for teachers in service. Evening classes and summer courses are organized for teachers, school administrators and counsellors. These programmes of in-service education are intended to keep the participants abreast of the new innovative techniques in methods of teaching, of counselling and of school administration. Considerable emphasis is placed on retraining the secondary teachers in the new concepts and practices of teaching integrated science and modern mathematics.

The College has four institutes which are in charge of organizing and carrying out pre-service as well as in-service programmes each in its specialized field. These Institutes are: (a) the Institute for Educational Research, (b) the Institute for School Administration and Counselling, (c) the

Institute for New Mathematics, and (d) the Institute for Secondary Teacher Education.

Apart from the programmes set up for further education of teachers in service, counsellors, and school administrators, the College is contributing to the professional growth of these educational workers in the field. The College disseminates new concepts and practices in teaching methods through personal contacts with secondary school teachers and publication of educational materials.

The Institute for Educational Research has a staff of 20 researchers. At present the Ministry of Education contracts the Institute to construct tests in intelligence, aptitudes and achievement to be used in elementary and secondary schools. The tests are used in these schools after appropriate training has been given to teachers in service. The Institute is planning to establish a centre for introducing microteaching as an innovative technique in teacher education. In addition, the Institute is designing a project for laboratory evaluation in order to test the competencies and skills of teacher trainees and teachers in service. This testing would have an objective impact on the improvement of teacher education curricula and methods of instruction, together with developing the programme activities for furthering the education of teachers in the field. The Institute has also a plan for producing a series of innovative techniques and modern methods based on research for the purpose of improving the existing practices in vocational guidance education especially in schools situated in rural areas.

Role of universities in upgrading teachers. There are four colleges of education attached to four universities in Iran. These colleges are mainly concerned with preparing teachers for secondary education and administrators and supervisors of schools. They offer a four-year course leading to a bachelor's degree in education. Apart from their training programme, they undertake studies and research to improve the educational system and teaching methods in the Iranian schools. The primary function of these colleges has been to prepare teachers specialized in subject matter areas for the secondary

schools. With the present speedy increase in the number of schools and the decentralization of education administration however, a large number of principals and supervisors are required. Therefore, since 1970 the College of Education at Teheran University has been preparing school administrators and supervisors to meet the pressing demand of the education system. In the meantime, it allows students graduating from other disciplines in the university who wish to obtain a teaching certificate to enrol and gain 24 units (one academic year) in the college. The main emphasis in this arrangement is upon providing the student teachers with the professional foundation courses, methods of teaching and school administration and management.

One programme of in-service education organized by the College of Education at Teheran University is for teachers who have acquired the high school certificate and two years of teacher education in the normal schools. These teachers apply to be admitted in the college to upgrade their qualification to the bachelor's degree level. The College procedure is to appoint a committee to assess the courses which they have taken in the normal schools in two years in terms of credits. An examination is also held for them to evaluate their academic standard. On the basis of this assessment the teachers are placed in the academic level equivalent to their scholastic achievements, and are admitted to evening classes to obtain the bachelor's degree in education.

Another programme organized in the college is for teachers who wish to obtain the master's degree in education. Only the graduates from the College of Education and from the departments of psychology and sociology in the university are admitted to this programme. The requirement of the College is that the teacher in service should earn 32 units which are mostly covered in two academic years. 14 units are required in courses in administration and organization in education, educational psychology, methods and techniques of teaching, guidance and counselling, educational psychology and methods of educational research. Eighteen units are in intensive study in one of these four specializations: (1) guidance and counselling, (2) educational psychology, (3)

educational administration, and (4) library science. This is in addition to the requirement of writing a thesis in his selected field of specialization.

Rural schools. With the advent of the Education Corps for teaching in the rural areas, a new impetus in expanding school facilities and enrolment became evident. After serving the villages for 18 months more than half of the Education Corpsmen have been employed as teachers by the Ministry of Education. In order to further their education, the Ministry of Education established a Teacher Training Centre in Karag in 1963, in which teachers in service were admitted for one-year course. The chief aim of the course was to provide the rural teachers with advanced studies in methods of instruction and community improvement. In the meantime, they were guided in undertaking research studies connected with the techniques through which educators could co-operate with other agencies to serve the rural communities. In 1965 the Centre was transferred to Mamazan and became a Teacher Training College with a four-year programme leading to a bachelor's degree in education. Thus the college became the first centre in Iran to provide systematic university level programmes for teachers in service serving in rural areas.

The number of graduates from the College since its establishment through 1970-71 were 1,777 teachers, of whom 768 obtained their diplomas after the two-year course and 1,009 obtained the bachelor's degree after completing the four-year course. In order to give incentive to the graduates, the Government selects about five annually according to their merit to be sent abroad to undertake post-graduate studies.

The Teacher Training College at Mamazan fulfills its chief objective in providing intensive programmes for teachers serving in the rural areas. It trains teachers who have already shown interest and determination in improving the rural community through education. At present a great number of graduates from the College are serving as educational leaders in the provinces and villages. Their impact has become evident in improving the educational system including the curriculum, teaching methods, administration and management of schools

as well as teacher training centres situated in communities. As the intensive training programmes of the College have proved successful in sharing the responsibility for developing the rural areas, some Ministries have requested the College to organize special programmes for their employees serving in villages. Starting from 1972-73, the College in collaboration with other Ministries was to set up two-year post-secondary training courses in its premises for administration and supervision of rural co-operatives and animal husbandry, rural engineering and sanitation and rural industries and home economics.

At present the Government intends to establish at Mamazan, as an extension of the College's programme, an international institute for rural development with the assistance of the United Nations Development Programme. The Institute is expected to offer a two-year post-graduate course leading to the master's degree in community development. It is planned to accommodate 100 fellows, 50 from abroad and 50 from Iran.

Correspondence education for teachers in service. A correspondence education course was established in Mamazan in 1971 by the Ministry of Science and Higher Education. The chief objective of the course is to give teachers in service and other educational workers serving in rural communities the opportunity to develop their professional abilities. The Government hopes to encourage teachers in service and school supervisors to continue their services in the rural areas by providing them with the educational facilities to improve their education and socio-economic status.

At present, there are more than 500 participants in the correspondence course. The programme started with organizing correspondence education for teachers of science, mathematics, humanities, Persian languages and for educational supervisors working in rural communities. The duration of the course is six years of post-secondary education. At the completion of the six years, the participant is awarded the bachelor's degree in education which is equal in status to the degree offered by colleges of education in four years. The

correspondence course is divided into two stages; each stage for three years. At the end of the first three years the participant obtains a diploma. In order to obtain the bachelor's degree the participant is required to earn 140 units. To encourage enrolment, the Ministry prescribed only a nominal fee of 250 rials (US $3.5) per unit in a year. The fee includes the cost of postage, books, pamphlets, and other instructional materials sent to the participants. The participants are requested every year to attend a course for two months during summer vacation in the Teacher Training College of Mamazan or other prescribed colleges.

In organizing and carrying out the correspondence education course the Ministry seeks the assistance and guidance of the Teheran University staff and members of teacher education institutions. They co-operate with the unit of correspondence education in the Ministry in setting the standard curriculum and the contents to be prescribed for the courses, preparing instructional materials, advising the participants on their answer papers, participating in the courses held during summer vacations and assessing the programme activities of this project.

The number of participants in the correspondence education course is expected to increase and reach between 2000 and 2500 for each year. Other Ministries have shown interest in correspondence education for their employees in rural communities. The Ministry of Science and Higher Education plans to diversify the correspondence education course, so that it would not only give the opportunity to upgrade the qualifications of teachers in service and other educational workers but also would extend its activities to other government employees working in the various fields in rural development. In addition, the Ministry is expected to establish, in the near future, a national network of libraries in the villages to serve as centres in which books and other reading materials and references would be available for participants in the correspondence courses. The plan is to set up a central library in a mother village which could serve other smaller villages where the participants work.

In-service programmes for updating knowledge of teachers

Education programmes for primary school teachers generally take the form of seminars and workshops arranged for a period of from one to three weeks. Teachers are selected to attend them according to the number of years of teaching service and their merits. The chief aims of the seminars are: (a) to get the teachers acquainted with the policy of the new educational system and the newly introduced curriculum of elementary schools, (b) to improve their professional competencies in teaching the standard syllabuses in each grade, (c) to help them develop an understanding of the new concepts, methods and techniques in teaching the subjects and especially in teaching experimental science, (d) to use the newly prepared textbooks and teachers' guides and (e) to improve their skills in the use of audio-visual materials in teaching. The programmes are organized in the teacher training centres situated in all provinces of the country and use existing physical facilities and the services of the local staff members of the centres. Resource persons from the Ministry of Education, provincial and local school offices, higher teachers' colleges and universities are invited to give lectures and demonstrations to the participants.

A number of refresher courses, seminars and workshops are held every year during summer vacation and evening sessions for teachers of secondary schools. These in-service teacher education programmes are mostly held in the National Teacher Training College at Teheran, colleges of education at universities, and in secondary schools in the provinces.

The Department of Audio-visual Communication and Radio Television Education participates in the programmes organized for teachers in service in the College of Education in Teheran. It provides them not only with the use of audio-visual materials but also training in preparing educational programmes for radio and television.

The Ministry of Education has recently started at Teheran an experimental programme for telecasting to teachers and pupils demonstrations of new methods of teaching integrated science for elementary and guidance cycles as well as at the second level.

JAPAN

Background of the educational system

Historical development. Since World War II the educational system in Japan has undergone a series of continuous reforms. The 'multi-track' system of education was changed to a 6-3-3-4 'single-track' system, and equal educational opportunity was provided for all people. During the quarter-century since the implementation of the Fundamental Law of Education in 1947, Japan has attained a high status among developed countries in terms of quantitative and qualitative educational expansion. Student enrolment and educational facilities at all levels of schooling have steadily increased. In 1970 the percentage of the appropriate age groups enrolled in primary, secondary and higher education reached as high as 99.9%, 88%, and 21.4% respectively. Since 1951, considerable modifications have been introduced in the contents of the standard curricula for schools in order to meet the rapid technological and social changes. Along with the introduction of educational technology in schools, Japan has also been emphasizing new programmes for the appropriate preparation of teachers. The teacher education institutions have been able to meet the challenge of technology. Improved curriculum standards, advanced theories of instruction, up-to-date teaching/learning aids and facilities, and educational research have become essential elements in the preparation of teachers. Further education of teachers in service was specially emphasized during the 1960s in order to help teachers update their knowledge and keep abreast of the social and technological changes taking place in a rapidly changing society. In addition, teachers in service have benefitted from their participation in the programme activities of some 400 educational research institutions established at local, prefectural and national levels.

In 1970, there were 382 universities (75 national, 33 local and 274 private) with a total enrolment of 1,406,521 students. 180 universities offered graduate courses for 40,957 students. This includes 1,238 students who pursue post-graduate courses in teacher education; 946 for the master's degree and 392 for the doctoral degree. A large number of teachers, principals and teacher consultants attend these graduate courses in the universities to upgrade their qualifications.

The existing pattern of teacher education is an open system. All persons who obtain the required number of credits provided in the Educational Personnel Certification Law from national or private universities with courses approved by the Ministry of Education are certified for the teaching profession. In addition to universities there are teacher training colleges or faculties established by the Government in each prefecture for the purpose of preparing teachers for primary and lower secondary schools.

Teacher certification requirements vary according to each level of schooling. Teacher certificates for kindergarten and primary schools are for all subjects, and for specific subject areas in lower and upper secondary schools. Teacher certificates are classified as 'regular' and 'emergency'. The former are subdivided into first- and second-class certificates.

First-class teacher certificates for kindergarten, primary and lower secondary schools and second class certificates for upper secondary schools are granted to university graduates either after four years of teacher education or after attending the prescribed courses in educational foundations after specializing in certain subjects. First-class certificates for upper secondary schools are granted to holders of the master's degree.

Emergency teacher certificates for kindergarten, primary and lower secondary teachers are granted to graduates from upper secondary schools who successfully pass the educational personnel examinations conducted under the prefectural authorities. Teachers who hold first- and second-class certificates are considered qualified for full teaching duties

and their certification is valid in all prefectures and for life. On the other hand, those who have emergency teacher certificates are appointed as assistant teachers. Their certificates are valid only in the prefectures which issue them and are generally honoured for a maximum period of three years during which the holders of the emergency teacher certificates should attend in-service courses to augment their qualification. Six years of teaching service and 45 credits are required to upgrade the qualifications of these teachers from the emergency teacher certificate to the second class certificate.

Recruitment policy. Prefectural boards of education appoint teachers for prefectural schools on the basis of the recommendation of the prefectural superintendent of education. The recommendation is normally made on the basis of the result of the prefectural-wide appointment examination.

For municipal school teachers, the prefectural superintendent of education selects teacher applicants on the basis of the results of an appointment examination and the recommendation of the municipal board of education, which is made with due regard to the opinion of the principal of the school to which a new teacher is to be appointed.

Before and during World War II, a number of substitute teachers and assistant teachers with no regular academic qualifications were appointed in schools. The percentage of these teachers, however, has been gradually decreasing either by retirement, leaving the profession or upgrading of qualifications through in-service education. As of 1969, the teachers without regular qualifications were only 1.7% of the total in primary schools, 0.4% in lower secondary schools and 1.8% in upper secondary schools.

The distribution of teachers who have taken four-year university courses or more varies greatly from one prefecture to another. For example, in prefectures with big cities, teachers with a bachelor's degree in elementary schools account for approximately 40%, while in rural prefectures the percentages range between 9 to 15. In 1968 the per cent distribution of local public school teachers by academic background was as shown in the table on the next page.

School Level	Total	University Graduates	Junior College Graduates	Upper Secondary School Graduates
Primary	100.0	24.1	59.8	16.1
Lower Secondary	100.0	52.9	43.4	3.7
Upper Secondary	100.0	91.2	7.3	1.5

The above table shows that the percentage of qualified primary teachers who obtained the prescribed teaching certificates totalled 83.9, that of lower secondary teachers 96.3 and in upper secondary teachers 91.2. However, the Government's policy is to upgrade the qualifications of elementary and lower secondary teachers to university level, and upper secondary to master's degree level in specialized subjects.

There are four salary scales for the teaching staff in national educational institutions and schools: one for university and junior college personnel, one for technical college personnel, one for upper secondary personnel, and one for lower secondary, primary and kindergarten personnel. Salary grades and steps are determined on the basis of the degree of complexity and responsibility of teaching duties, as well as the academic background, kinds of teaching certificates, and years of teaching service. The salary tables for teachers in primary, lower and upper secondary schools consist of three grades, for principals, for teachers and for assistant teachers. The salary system for teachers in national schools serves as the basis for salaries of teachers in local public schools.

In principle, a salary raise for primary and secondary school teachers is given once every year so long as a teacher performs his duties satisfactorily. This normal period can be shortened on the basis of merit including outstanding teaching performance. This is called the System of Special Raises in Salaries.

Organization of further education programmes

1. (a) National. There is a Division for Teacher Education under the Higher Education and Science Bureau in the

Ministry of Education. The chief functions of the division are: (a) to determine national standards for teacher education in universities and colleges; (b) to supervise teacher training and issuing of teacher certificates; and (c) to plan, assist and advise on teacher education programmes for teachers in service. The Divisions for primary, lower secondary and upper secondary schools in the Ministry also take an active part in organizing and carrying out short-term programmes for in-service teachers and administrators both at the national and at the local levels in collaboration with the division of teacher education and the prefectural boards of education.

The Ministry of Education itself not only carries out in-service teacher training but also helps and subsidizes in-service teacher training held by Prefectural Boards of Education.

(b) Prefectural. A Board of Education is established by law in each of the 46 Prefectures. Each Board is in charge of planning, carrying out and supervising the educational system in the prefecture within the overall policy defined by the Ministry of Education. Among other functions, the Prefectural Board takes an active part in the progressive development of education through setting up a variety of in-service programmes for improving the qualifications of teachers and keeping them abreast of the new innovative techniques in teaching. The personnel section of each Prefectural Board of Education carries out in-service teacher training in the Prefecture.

Each Prefecture has a Prefectural Education Centre including a Science Centre. The Centre offers in-service training following the programme planned by the Prefectural Board of Education.

Municipalities also provide opportunities for a systematic further education for public school teachers, principals and teacher consultants.

2. At national level, almost all in-service training programmes organized are for trained teachers and school administrators. The Ministry of Education invites principals, vice-principals, and teachers in charge of middle management (e.g. key teachers, heads of subject departments) to

in-service training programmes from all over Japan. At local level there are no separate in-service training programmes for untrained teachers.

Some programmes of further education are common to trained teachers (who have regular certificates) and untrained teachers (who have emergency certificates).

3. Subject areas covered by the in-service programmes organized for teachers include Kindergarten education, Primary education, Science, Mathematics, Japanese, Social Study, Fine Arts, Music, Calligraphy, Foreign Language, Vocational Education, Special Education and Health Education.

4. Some pilot projects are organized to introduce new methods and techniques in school in such areas as kindergarten education (46 kindergartens in 1971), primary education (28 schools), lower secondary education (30 schools), upper secondary education (7 schools), moral education (276 secondary schools), and student guidance (100 lower secondary schools, 46 upper secondary schools). Pilot schools have been subsidized by the Ministry of Education.

Types of in-service programmes

Most of the in-service programmes organized by the Ministry of Education are held in the National Education Centre and other central facilities in Tokyo. Participants are usually principals, vice-principals, teachers in charge of middle management and supervisors of Prefectural Boards of Education. They are selected on the basis of the applications recommended by their respective local Boards of Education. Teachers who have attended in-service programmes may thereby improve their prospects of promotion but no salary increases are given: attending in-service courses is considered part of teacher's work-load, and no fees are charged. The number of participants of in-service programmes organized by the Ministry of Education amounted to 56,599 in 1971.

Credits or certificates are given to those who complete the programme. There is a 'study abroad' programme as one of the in-service teacher training courses. 500 teachers

in 1970 and 700 teachers in 1971 were sent under the 'study abroad' programme.

The in-service programme committee of the appropriate sections of the Ministry of Education selects staff and resource persons. They are mostly university professors, administrators and programme specialists from governmental departments.

The applicants for the 'study abroad' programme of teachers subsidized by the Ministry of Education first participate in Study Seminars of approximately five weeks' duration.

The programmes arranged by the Ministry aim at updating teachers in improved methods of teaching, at helping teachers and principals to get acquainted with the changes taking place in curriculum contents, and at developing professional leadership in education. The duration of the workshops, seminars, conferences and study groups organized by the divisions of the Ministry varies from one week to three months. No academic credits are earned in these programmes. In addition, programmes are set up for sending teachers in service and school administrators abroad, especially to the Asian countries, for a short time in order to observe other systems of education, exchange experiences with other teachers and administrators, and develop regional and international understanding.

NHK (Japan Broadcasting Corporation) offers the following programmes:

Radio

1. "Teachers' Hour", Sunday:	10:00 - 11:00 a.m. 2:00 - 3:00 p.m.
2. "Educational Counselling Room", Sunday:	9:00 - 9:15 a.m. 4:20 - 4:35 p.m.
T.V. - "Teachers' Hour", daily:	3:30 - 4:00 p.m.

There are professional organizations which aim to promote the professional abilities of teachers; e.g. Japan

Society for Mathematical Education, All-Japan Society for Homemaking Education, Japan Federation of Special Education. Many teachers belong to one or more organizations and attend annual research meetings and present or read their study papers and participate in the group study of these organizations.

System of upgrading teachers' qualifications

1. An 'untrained' teacher is a teacher who has an emergency teaching certificate. The percentage of untrained teachers in 1971 is shown below:

Kindergarten	14%
Primary schools	1.5%
Lower Secondary schools	0.3%
Upper Secondary schools	0.3%

2. One of the features of teacher education in Japan is the open-door policy for upgrading teachers in service. Teachers in service seeking higher certificates may earn additional credits in universities and faculties provided they have served a prescribed number of years in teaching. This is in addition to acquiring good records in their professional performance as teachers. The prescribed credits can be acquired by attending regular university or faculty courses or by in-service training, through correspondence or other off-campus courses approved by the Ministry of Education.

Assistant teachers who have obtained the Emergency Certificate Examination under the auspices of their prefectures require upgrading programmes. The minimum academic requirements for these 'emergency' teachers are: (a) the upper secondary school certificate which qualifies them only to assist in teaching in kindergarten, primary and lower secondary schools, and (b) the two-year college diploma which permits them to assist in teaching in upper secondary schools.

Six years of teaching experience and 45 credits in general and professional courses are required for upgrading the emergency teacher to the second class certificate to teach in kindergarten, primary and lower secondary schools, while

five years of teaching experience and 45 credits are required for emergency teachers in upper secondary schools to be upgraded.

Teachers of kindergarten, elementary and lower secondary schools who hold the second class teacher certificate are required to have five years of teaching experience and 45 credit hours in order to be upgraded to first class certification. Upper secondary school teachers who had obtained the second class teacher certificate are upgraded to first class teacher certificate when they put in three years of teaching experience in addition to acquiring 15 credits in courses prescribed by the Ministry of Education.

3. It is only in an emergency of short supply that the Prefecturates are allowed to appoint teachers below the prescribed qualifications. Upper secondary school graduates may be appointed after examination in the Prefecturates to be assistant teachers in kindergarten, elementary and lower secondary schools. Their emergency certificate is valid only for three years in their respective Prefectures. Within these years those teachers should attend systematic in-service education courses, workshops and conferences to raise their qualifications. The same requirements are applicable to upper secondary emergency teachers who had only two years of college education after obtaining the upper secondary school certificate. If the emergency teacher fails to continue his further education within three years from his appointment his emergency certificate terminates and he is consequently not entitled to continue as a teacher.

In the last few years the number of emergency teachers appointed in schools has been considerably reduced following the large number of teachers graduating from universities and national colleges of education.

4. Correspondence education programmes are also available for obtaining the secondary school certificate and degrees in higher education including teacher education. The programmes are mostly designed for young people who work during the day and so are unable to attend the regular courses

offered in secondary schools and universities. Correspondence education for the upper secondary course of three years in regular schools can be completed in four years. For higher education, the students enrolled in correspondence programmes must attend classes for one-year out of the four years required for completion. In 1968 the number of upper secondary correspondence schools reached 92, with an enrolment of 136,299.

The correspondence programmes for higher education provide courses of two or four years for students who have successfully completed upper secondary education or equivalent. University (or 'college') correspondence education was established in 1948, in order to provide equal educational opportunities for all to higher education. It is now an integral part of the national system of higher education, providing courses on identical levels with the requirements of college courses. The students study at home using regular college texts and guidebooks, submit reports and progress from year to year when they pass the specified examinations. In 1962 there were 12 colleges offering correspondence courses with 56,155 correspondent students on role; in 1967 the number had increased to 15 colleges with 74,878 enrolees.

In support of the college correspondence education programmes, and in co-operation with the universities, the Japan Broadcasting Corporation (NHK), a semi-governmental organization, has been broadcasting and telecasting educational radio and television courses required by the universities since 1961. Courses presented by NHK through radio broadcasting and the TV network are recognized as official courses by the universities offering correspondence education. Some of these telecast and broadcast courses meet the requirements for earning academic credits in the colleges of education both for pre-service and in-service teachers. Courses in subjects including psychology, sociology, principles of education and, teaching methods are telecast by the NHK TV network for prospective teachers and teachers in service who wish to raise their qualifications through the opportunity provided to them by the university correspondence education. In broadcasting these courses the following co-ordinating procedures are carried out:

a) courses to be broadcast on radio and television are jointly selected by a committee comprising NHK and university officials;

b) lecturers are selected by NHK on the recommendations of the various universities; and

c) selected lecturers prepare textbooks and guide materials which are distributed to the students by the universities offering correspondence education.

In 1971, the NHK correspondence course programme, including teacher education courses transmitted by radio, totalled 12 programmes for four hours per week; and on television 13 programmes for 6 hours 30 minutes per week.

In-service education for updating knowledge and skills

1. Permanent centres for providing extension service for teachers in service. Apart from universities and national colleges of education which serve mainly as permanent institutions for further education leading to higher degrees, there are approximately 400 national and prefectural centres for educational research and in-service education established throughout the country.

a) National centres for in-service teacher education and research

At the national level, there are three distinctive centres for educational research and in-service education: the National Institute for Educational Research, the National Education Centre and the National Comprehensive Research Institute for Education of Handicapped Children, all situated in Tokyo. The National Institute for Educational Research (NIER) was established in 1949 by the Ministry of Education. The Institute's function is to carry out fundamental and comprehensive research on education with a view to providing basic research findings and materials for the formulation of educational policies, curriculum organization, and methods and techniques of teaching in Japanese schools and universities. The Institute has been carrying out a number of research projects on a

nation-wide scale with the co-operation of the Ministry of Education, prefectural boards of education and their research centres, universities and schools. In its earlier years the Institute emphasized the provision of in-service training courses for teachers and school administrators. However, this emphasis has gradually been replaced by priority to educational research. At present a few teachers in service are seconded by the prefectural boards of education to the Institute for carrying out research studies.

The National Education Centre at Tokyo, established in 1964 with the financial assistance of the Ministry of Education, provides facilities for the further education of teachers and administrators for improving their professional growth and keeping them abreast of recent innovations in teaching and learning. The Centre operates as an education foundation under the supervision of the Ministry of Education. Because of its large financial resources, and facilities, it has been possible for this Centre to provide a variety of quality programmes for improving the professional standards of teachers and educational leaders on a nation-wide scale. Among these programmes are (1) general courses on new trends and innovations in education, (2) advanced courses for adults, (3) special lectures by eminent cultural specialists and distinguished foreign scholars in education and social sciences, (4) foreign language courses for education leaders, (5) advanced training courses in the use of teaching machines and communication in education, (6) film shows for deepening appreciation of the historical and traditional ways of life of various nations, and (7) art film festivals of selected Japanese and foreign films for educators and the public.

The National Comprehensive Research Institute for the Education of Handicapped Children was established in 1971 in Tokyo. The Institute is engaged in the diagnosis, treatment and education of mentally and physically handicapped children on an integrated basis. It also provides advanced in-service education programmes for teachers and school administrators. It has facilities for lodging 150 participants who are selected from the prefectures. The plan for 1972 provides two basic

programme activities for the further education of teachers in service. The first is the training for a period of one-year of 50 principals of schools especially established for handicapped children. The second is organized for 300 selected teachers in service from the prefectures and municipalities who are promoted to the positions of principal or supervisor for handicapped schools. This in-service training programme lasts three months for each group of 100 teachers. The Institute proposes to constitute 13 laboratories staffed with 117 researchers and educationalists which would make it a pioneering research institute and in-service teacher education centre concerned with handicapped children.

b) Prefectural centres for in-service teacher education and research

Prefectural institutes for research are established with special emphasis on educational research and training of teachers in service. Since 1965, the Ministry of Education has been subsidizing the establishment of permanent in-service teacher education centres in the prefectures. The chief purposes of these centres are to organize training programmes for the improvement of the professional competency of teachers in service, school administrators and supervisors, and to prepare and produce instructional materials for guiding teachers and administrators in schools. At present there are 30 in-service teacher education centres established in the 46 prefectures.

The Tokyo Metropolitan Institute for Educational Research and In-Service Training is an example of the permanent research and in-service teacher education institutes established in the prefectures in Japan. The Institute was first established in 1951 and relocated in 1966 as a centre for educational investigation, research and in-service training under the jurisdiction of the Tokyo Metropolitan Board of Education. Its basic functions are: (a) to study the educational problems in Tokyo through research and studies, (b) to promote the academic and professional qualities and abilities of teachers in service, and (c) to provide the teaching staff and the citizens with educational data and information, and with educational consultation.

The Institute employs 90 researchers and educationalists, and 40 administrative staff, and offers annually some 144 different programmes for in-service teacher education and research studies in the various components of school curricula, teaching techniques and administration. The duration of the refresher programmes varies from 6 to 7 days for short-term training. For a longer period of intensive in-service training and research studies the duration varies from three months to one year. The total number of teachers and school administrators who annually benefit from the in-service training programmes organized by the Institute reaches 7,000 participants out of 55,000 teachers in the public schools of Tokyo prefecture. The Institute also admits annually approximately 11 principals and 50 teachers from the different boards of education to undertake research studies in specific fields of school administration and subject matter taught in schools. The duration of such research study is one year. Each principal undertakes a specific research project in the field of school administration and management under the guidance of research and subject specialists. Two days a week are allotted for self-study and collection of data and statistics for the research work. During the other four days the participant follows the programme organized for him in the Institute. At the end of the year each principal submits his research study to the Institute and copies of it to his board of education. Outstanding researches are published and disseminated to Tokyo's schools.

The 50 teachers annually selected by the Institute through a standard recruitment procedure are drawn from the senior staff of Tokyo prefecture schools. The main objective of this research award is to assist outstanding teachers in service to undertake research studies related to their respective interests and subject matter areas taught by them in primary and secondary schools. Twenty of these teachers carry out their research in selected universities. The remaining thirty teachers carry out their research under the direction of the Institute's staff. The duration of the fellowships awarded for these teachers is one year.

In-service education for updating knowledge

The refresher in-service education programmes organized annually in the Institute for 7,000 teachers and school administrators aim at, (a) improving their professional competencies in teaching methods and school management, (b) introducing new concepts, modern trends and techniques in classroom instruction, and (c) providing skills in using teaching machines, audio-visual aids and instructional TV programmes in teaching. A variety of educational training programmes are offered to participants such as school management, educational methods, social education, educational administration and finance, Japanese language, social studies, mathematics, health and physical education, foreign language, fine arts, sciences, industrial arts, commercial and agricultural education, homemaking, guidance, psychotherapy child study and special education.

c) Municipality centres for in-service teacher education and research

At present there are 3,271 municipalities of which 594 are in cities, 1,999 in towns and 678 in villages. Practically all municipalities have established boards of education as prescribed by the law. A number of municipalities have set up permanent centres for educational research and in-service training centres. Most of the programmes organized are designed for elementary and lower secondary school staff. Such training programmes take place either in certain pilot school premises, or in the research and in-service teacher education centres situated in the municipalities. Some municipalities send selected teachers and administrators to the permanent centres for research and in-service education located in the capital of the prefectures or in Tokyo.

2. Organizing in-service teacher education programmes for introducing new orientation to the curriculum

a) Recent improvement in the curriculum standards. The Ministry of Education establishes curriculum standards for each stage/level to assure maintenance of quality in education. The curriculum standards are stated in 'Courses of Study' prescribed by the Ministry of Education on the basis

of the recommendations from the National Curriculum Council which comprises specialists, researchers, teachers and school administrators and others. The Course of Study provides a basic framework for the curriculum of each grade: each school develops its own curriculum on the basis of the Course of Study, taking into consideration the actual environmental conditions which exist in the community where the school is situated. The Course of Study was revised in 1968 for primary schools, in 1969 for lower secondary schools and in 1970 for upper secondary schools. The chief objectives of this revision were to provide for (1) the advancement of science and technical education, (2) the promotion of moral and ethical education, and (3) adjusting education to individual ability and aptitude. In the upper secondary schools the new Course of Study placed special emphasis upon the diversification of subjects and contents of education in order to provide for general and vocationally oriented education. New subjects such as systems analysis and programming were also introduced in technical and commercial courses.

b) Recent improvements in teaching methods and materials. With the rapid developments in science and technology and the progress made in individualized learning through the use of teaching machines and audio-visual materials, the Ministry of Education has placed a considerable emphasis upon improving the existing teaching methods and materials in all stages of education. In most of the schools new kinds of teaching-learning machines are gradually being employed in teaching. Technological aids like television, tape recorders, and overhead projectors (OHP) are becoming increasingly common. In recent years, extensive experiments are being made in the use of the computer in teaching.

c) Methods of orienting teachers to the new curriculum and techniques. In order effectively to introduce the newly revised Course of Study for primary, lower secondary and upper secondary schools and at the same time to improve the teaching methods and materials in classroom instruction, the Ministry of Education in co-operation with the prefectural and municipal boards of education planned a well co-ordinated

national network of in-service programmes for teachers, school administrators and teacher counsellors all over Japan. Since the completion of revision of the curricula, the Ministry of Education in collaboration with the prefectural and municipal boards of education has been organizing conferences, workshops, seminars and study groups to orient all teachers in the country.

3. University studies in research by teachers in service. The Ministry of Education and the prefectural and municipal boards of education annually award fellowships for outstanding principals and teachers to enrol in universities to undertake research studies. These fellowships are not normally intended to provide a higher academic degree, but to update teachers and principals in the modern methods of teaching and administration and to enable them to acquire systematic experience of research techniques. Fees are paid by the Ministry or the Boards and the awardees receive their regular salaries in addition to supplementary allowances. The duration of these fellowships ranges between three months and one year.

4. Further education through professional organizations. There are a number of Teachers' Organizations in Japan which are active in promoting improved working conditions for the teachers or are dedicated to fostering professional growth. Many of these teachers' organizations organize seminars, workshops and study group meetings of short duration for their members at the national, prefectural and local levels. These programmes are normally intended for teachers in service to meet and discuss major issues regarding education in the country. They also prepare and disseminate educational materials.

REPUBLIC OF KOREA

Background of the educational system

Since her independence in 1945, Korea has given priority to the expansion of education as a basic requirement for introducing effective change in the socio-economic conditions of the country. If a base figure of 100 is given to represent the student population at each level of education for the year 1945, the relative increase in enrolment in 1970 was 420.9 in primary schools, 1,559.4 in middle schools, 784.2 in high schools and 2,206.7 in higher education institutions. The priority now is the qualitative improvement of curricula, teaching methods and training of teachers at all levels.

1. Progress of education. The current educational system is based upon the 6-3-3-4 pattern. By the Constitution of the Republic, primary education is compulsory and free for six years, beginning at the age of six. In 1970 the number of primary schools was 5,961, with 5,749,301 pupils and 101,095 teachers in service. Plans are being made to extend free education from the present six to nine years. At the second level of education, in 1970, there were 1,608 middle schools with 1,318,808 students and 31,207 teachers, and 889 high schools with 590,382 students and 19,854 teachers. Of these schools, 408 were academic and 481 vocational. Higher Education consists of two-year junior colleges, four-year colleges or universities and graduate schools. There were 200 higher education institutions with 193,591 students and 10,102 staff members. Of these, 51 were junior colleges with 53,817 students, 85 were colleges and universities with 146,414 students, and 64 were graduate schools with 6,640 students.

2. Teacher education. There are two distinctive types of teacher education institutions; the two-year junior teachers' colleges for preparing primary school teachers and the

four-year colleges of education for secondary school teachers. In 1971 there were 16 junior teachers' colleges with 12,190 students and 660 instructors. For the preparation of secondary school teachers there were in 1970 three national and nine private colleges of education. Also attached to the three national colleges are in-service training institutes for secondary teachers. The number of students enrolled in these colleges of education, both national and private, was 13,003.

3. Recruitment policy. The statutory classifications for teachers and school administrators can be found in the Law of Education Officials (Law No. 2022) which was proclaimed on 3 July 1968. According to the Law, teachers in primary and secondary schools are classified as 'assistant' and 'regular' teachers and further subdivided into second and first class for both levels of schools. School administrators are classified as vice-principal and principal. The following are the statutory classifications prescribed by Law.

Primary school teachers (grades I-VI)

a) Assistant teacher

(1) One who has passed the examination for assistant teachers for primary school.

(2) One who has graduated from a temporary teacher training institute for primary school teachers.

b) Second class teacher

(1) One who has graduated from a junior teachers' college.

(2) One who has majored in primary school education at a college of education.

(3) The person who has served for more than three years as an assistant teacher and has taken 15 credit hours (240 hours) in education courses offered by temporary teacher training institutes.

c) First class teacher. The person who has served more than three years as a second class teacher and has received more than 240 hours (15 credit hours) of in-service education.

d) Vice-principal. One who has served more than three years as a first class teacher and has taken 15 credit hours in advanced education courses offered by in-service education institutes.

e) Principal. One who has served more than five years as a vice-principal and has taken 15 credit hours in advanced education and administration courses offered by in-service education institutes.

Secondary school teachers (grades VII-XII)

a) Assistant teacher. One who has passed the examination for the assistant teacher's certificate for secondary schools.

b) Second class teacher.

(1) One who has graduated from a four-year college of education.

(2) One who has graduated from a four-year college and has taken 24 credit hours in education courses offered by universities or by the temporary teacher training institute for secondary school teachers.

(3) One who has graduated from the department of vocational education at a non-teachers' college.

(4) One who has served more than three years as an assistant teacher and has taken 15 credit hours in education courses.

c) First class teacher.

(1) One who has served more than three years as a second class teacher and has taken 15 credit hours in education courses and major subject area courses.

(2) One who holds a master's degree of education and has served more than one year as a second class teacher.

d) Vice-principal. One who has served more than three years as a first class teacher and has taken 15 credit hours (240 hours) in advanced education courses offered by the in-service education institutes.

e) Principal. The person who has served more than three years as a vice-principal and has taken 15 credit hours in advanced education courses and administration courses offered by the in-service education institutes.

4. The salary of school teachers is based on statutory qualifications and grade points. Promotion of school teachers depends on the length of their educational service and the amount of in-service education completed.

5. There are a few untrained teachers employed by some private schools. The Ministry of Education has provided opportunities for the untrained teachers to take 15 credit hours in education courses required for obtaining a teacher's certificate. No teacher's certificate is given to untrained teachers unless they have taken the required courses in education, and no untrained teacher is appointed to public schools.

Organization of programmes for further education

1. Administrative structure. The Ministry of Education consists of the Planning and Management Office, the Supervision Office, and six bureaux for General Education, Higher Education, Science Education, Textbooks, Social Education and Physical Education, and General Affairs.

Under the Higher Education Bureau in the Ministry of Education there are two sections, one for in-service training and the other for teacher training. The teacher training section is mainly responsible for organizing programmes and activities related to pre-service education and certification of candidates who qualify while the in-service training section deals with planning, organizing and implementing programmes for updating and upgrading teachers with the collaboration of the universities, colleges and provincial Boards of education.

This section is also responsible for planning and financing the in-service education institutes attached to junior teachers' colleges and colleges of education.

The local educational administrative system comprises two special cities and nine provincial boards of education. Under each board of education there are educational research institutes which provide in-service education for their own provincial teachers.

2. In general, there are two kinds of in-service education in the Republic of Korea, one for obtaining a higher status teacher's certificate (upgrading) and the other for improving the general qualifications of teachers without reference to higher statutory certificates (updating). In-service education for promotion to a higher status is divided into four categories as follows :

a) The course for an assistant teacher to gain promotion to second class teacher status.

b) The course for a second class teacher to gain promotion to first class status.

c) The course for a first class teacher to gain promotion to vice-principal.

d) The course for vice-principal to gain promotion to principal.

3. There are two permanent institutes which take care of in-service education for school administrators, under the auspices of the Ministry of Education. One is the Institute for the Study of Educational Administration which is attached to the College of Education, Seoul National University, and the other is the Central Institute for Educational Administration which is directly controlled by the Ministry of Education. These two institutes were established in accordance with the provision of the Law of Education and the In-Service Teacher Training Ordinance (Presidential Order No. 1642) as in-service training agencies for higher educational administrators. The main functions of these institutes are to provide

programmes for (a) leadership training; (b) research; (c) information exchange; and (d) professional consultation to enhance the qualities of educational administrators as specialists by increasing their administrative skills, promoting the research of general educational administration, and exchanging information with the related organizations at home and abroad, while responding to requests for counsel for solving problems.

4. When a new orientation is given to subjects in the curriculum or new subjects are introduced in the curriculum, temporary programmes of in-service education are organized for giving the required competence in teaching subjects to teachers in service.

5. The following is cited as an example of the subject-areas covered by the in-service education programmes organized for first class teachers to gain promotion to vice-principal of primary schools.

a) Foundations of Education

The Charter of National Education (4)
Philosophy of education (4)
Educational psychology (12)
Educational sociology (8)
Theory of primary education (12)

b) Educational Administration

Educational system (8)
Educational policy (4)
Principles of school administration (12)
Principles of supervision (8)
Supervision policy (4)
Educational laws and regulations (12)
Educational finance (12)
Educational management (4)
Management of school library (4)
School architecture (4)

c) Curriculum and Teaching Method

Primary school curriculum (12)
Learning process (12)

Moral education (4)
Audio-visual education (8)
Anti-communism education (4)
Extra-curricular activities (4)

d) Guidance and Evaluation

Guidance and counselling (12)
Guidance of the problem child (8)
Mental hygiene (8)
Educational statistics and evaluation (12)

e) Other subjects

Long-range economic planning (4)
Educational problems (4)
Korean history (12)

f) Individual study

Presentation of an educational thesis (24)

Types of in-service programmes

1. In general, in-service education programmes are organized at the following institutions.

a) Two special cities and nine provincial education research institutes which are under the direction of the respective boards of education.

b) Seventeen in-service education institutes for primary school teachers attached to junior teachers' colleges.

c) Four in-service education institutes for secondary school teachers attached to colleges of education.

d) Two permanent institutes of educational administration.

e) Other temporary institutions authorized by the Ministry of Education when needed.

2. The qualifications for participants depend on the courses which they take. The following are the legal provisions for those who wish to receive in-service education:

(a) the participants in the course for the second class teacher's certificate are those who have served more than three years as assistant teachers; (b) the participants in the course for the first class teacher's certificate are those who have served more than three years as second class teachers; (c) the participants in the course for the vice-principal's certificate are those who have served more than three years as first class teachers; (d) the participants in the general and special courses for study and training are teachers who are serving at every school level (primary and secondary); (e) the participants in the educational administration course are those who are serving as educational officials, supervisors, and principals at every school level and are selected by the screening committee.

Each provincial board of education recommends participants, with the permission of the Ministry of Education, to the in-service education institutes. The number of participants varies from one course to the other - the largest size has been 820 persons while the smallest was only 33 persons. But the size of a class usually consists of no more than 50 persons.

The main incentive given in in-service education is promotion to a higher certificate status. Participants are promoted from one level of certification to a higher one on completion of the course requirements. Certificates of principal, vice-principal, first class teacher, or second class teacher are given to those who have completed 15 credit hours of required courses in their respective status level. When the participant is promoted, his monthly payment is increased according to the salary scale allocated to the certificate obtained.

Participants in these programmes attend the courses without payment of tuition fees. In addition, certain allowances are provided to the participants to cover travel expenses and the purchase of necessary books and other instructional materials. The finances for in-service education are provided by the Ministry of Education.

Promotion for higher posts in the Ministry of Education and Boards of Education in the provinces and special cities is

mostly given to teachers and principals of elementary and secondary schools who have attended the in-service teacher education programmes and raised their certification status. Most fellowships and scholarships for further education abroad are awarded to those who have completed in-service programmes. No in-service education programme which has reference to higher certificates is completed before an educational thesis is approved for graduation. It provides 24 hours of individual study with the help of a professor.

3. Of the additional education programmes for teachers, one is for primary school teachers who did not graduate from junior teachers' colleges, and the other is for secondary school teachers who did not graduate from four-year colleges of education. The programmes are organized and administered respectively by a junior teachers' college or college of education and lead to a junior teachers' college diploma or a bachelor's degree. They are held during the two vacation periods (summer and winter) or in the evening.

An institute for secondary school teacher training is established in each college to provide in-service courses for obtaining a first-class certificate. Courses are also organized for teachers who have the first-class teacher's certificate and wish to be qualified for the post of vice-principalship or vice-principals for the post of principalship. The duration of each of these courses, mostly organized during summer and winter vacations, is 12 weeks. The in-service education programme for educational administrators conducted by the Institute for the Study of Educational Administration attached to the College of Education, Seoul National University, helps teachers to gain promotion to a higher status. The Institute places emphasis on leadership training programmes for higher educational administrators including school principals, vice-principals, school supervisors, and researchers of elementary and secondary schools.

Besides these programmes, there are several graduate schools of education which provide programmes on the masters' degree level. There are evening courses as well as full time courses for teachers who are serving at school. The applicants

must have a bachelor's degree and must pass an entrance examination conducted by the graduate school of education.

There are no programmes utilizing radio or television for the further education of teachers in the Republic of Korea. A plan for correspondence education programmes for teachers utilizing radio and television is being developed.

4. The Ministry of Education has been encouraging the study and adaptation of new science curricula. For example, the Physical Science Study Committee (PSSC), the Introductory Physical Science (IPS), and Chemical Education Material Study (CEMS) have already been translated into Korean, and several other foreign textbooks are now being translated. At the same time, the Ministry, with the co-operation of UNICEF, has initiated two related projects: an intensive in-service education programme for secondary science teachers and the experimental teaching of such new science curricula as ESS, IPS and PSSC at a number of primary and secondary schools.

For the development of teaching methods and techniques the Korean Institute for Research in the Behavioral Sciences (KIRBS) has been systematically pursuing a long term research and development project in Mastery Learning with middle school (lower secondary school) students. The Project was begun in 1969 with a pilot study of about 270 students in a middle school in Seoul. It has been steadily expanded and it now embraces about 50,000 students and 45 middle schools. Begun in March 1971, the project covers four subject-matter areas: Korean language, mathematics, science, and English, in grades VII and VIII.

In-service education for upgrading qualifications

1. Until 1962, there were three types of teacher education institutions to train teachers for primary, middle and secondary education. The first type was the normal schools which admitted students with the middle school certificate to a three-year course covering grades X to XII of secondary schools. Graduates were awarded a teaching certificate which permitted them to teach in primary schools. The second type

was the junior teachers' colleges which admitted students after completion of high school certificate. The duration of the course was two years of teacher education after which the graduate was certified to teach in middle schools. The third type was a four-year course in colleges of education (university level) after obtaining the high school certificate. Student teachers in these colleges were prepared to teach in middle and secondary schools after obtaining the bachelor's degree in education.

In March 1962 the normal schools were also classed as junior teachers' colleges for two years of teacher education following the secondary school certificate. Student teachers who complete all requirements of the college are awarded a teaching diploma which permits them to teach in primary schools. This diploma is categorized as a regular teacher's license of class 2. According to the certification law a teacher in this category is given the salary and allowance of a certified teacher for primary schools. In order for this teacher to obtain the first class certificate he must undergo further in-service training to upgrade his qualifications.

The Ministry of Education requires that teachers to be appointed in middle and secondary schools should acquire a minimum qualification of the bachelor's degree in education. This degree is awarded by colleges of education after completion of four-year course. The minimum credit requirement for graduation from these colleges is normally 160 credits, of which 42 credits in general education subjects, 30 in professional subjects, and 88 credits in major subjects. A student teacher should have a major in one subject and has the option of a minor. The middle and secondary school teachers are also provided by other colleges such as home economics, fine arts, music, agriculture, or science. The Ministry of Education stipulates that holders of B. A. and B. Sc. from colleges other than colleges of education must earn a minimum of 20 credits in education in order to be certified as teachers. These credit hours may be earned during or after the four-year course of higher education. In the meantime there are some vocational, commercial and agricultural colleges with built-in

programmes for preparing teachers to both academic and vocational schools in these fields.

2. Owing to the expansion in elementary education and increase in enrolment the number of teachers required is normally more than those who graduate from the junior teachers' colleges. For example, in 1970 the demand for teachers in primary schools exceeded the supply from these colleges; 300 'untrained' teachers were consequently appointed with secondary school certificate and equivalent. In order to provide them with basic knowledge in teaching, 'crash' courses were held in temporary teacher training institutes attached to the junior teachers' colleges. The duration of these courses is four months in which the colleges provide a short-range programme for orienting the participants with the fundamentals of the teaching profession and with the curriculum content of primary education. As more teachers were urgently required, another 400 teachers with the secondary school certificate were appointed in 1970 after a competitive examination was held for selection.

For 'untrained' primary school teachers in service the Ministry of Education, in collaboration with the provincial and local education authorities, organize two distinct training programmes for upgrading teachers' qualification. These programmes are carried out by the junior teachers' colleges for two categories of in-service teachers. The first category comprises those teachers who obtained the high school certificate or equivalent and who did not undergo a continuous teacher training for two years in a junior teacher's college. These 'untrained' teachers are appointed as assistant teachers and are required through in-service training to upgrade their qualification to the second class teacher's certificate. To obtain this certificate the untrained teacher in service should serve three years and attend a teacher education programme for 240 hours organized during summer and winter vacations. The second category of teachers in service are those who graduated from the normal schools and whose qualifications are to be upgraded to the level of the diploma of junior teachers' college. In order to obtain this diploma they are

required to attend in-service teacher education programmes during summer and winter vacations in addition to two years of evening classes. Upon completion of this training they must join the regular programme for the second semester of second year in a junior teachers' college. At the end of the semester they are examined in the same way as the regular students of the college. Those who pass the examination are awarded the same diploma as the regular student teachers.

The 'untrained' teachers for middle and high schools are those who have obtained the degree of bachelor of arts or science from colleges and universities without taking the prescribed requirements in teacher education. As more teachers are needed to meet the expansion in secondary schools, the Ministry of Education is compelled to recruit teachers who have graduated from colleges other than the colleges of education or who had specialized in subject areas such as music, fine arts, science and mathematics, without obtaining the prescribed 20 credits in teacher education. In order to qualify these teachers for the teaching profession, temporary teacher training institutes attached to the colleges of education offer four-month courses in philosophy of education and methods of teaching to earn the prescribed 20 credits in teacher education. Teachers who successfully complete the required professional courses become qualified second class teachers.

3. The legal basis of in-service teacher education is provided by the Teacher In service Education Ordinance under Article 39 of the Educational Public Service Act. The in-service teacher education programmes are of three kinds: (a) an administration and regular course of in-service training, (b) a special course of in-service training, and (c) a general course of in-service training. The first two are carried out in the junior colleges of education and the provincial education research institutes with the approval of the provincial boards of education and Ministry of Education. Teachers in service who have completed the course requirements may proceed to acquire higher qualifications. The third, which is of a general nature to orient the teachers in service to new trends and techniques in education, is mostly carried out in the Central

Educational Research Institutes, Central Audio-Visual Centre, Central Institutes for Training in Educational Administration, Provincial Educational Institutes and colleges of education. Participants in this type of short-term programme do not acquire any higher grade certificates of qualification. The duration is from one to four weeks.

4. The system of long-term, or graduated, in-service education programmes for upgrading the qualification of teachers is providing the opportunity for teachers in service to continue their professional growth. The trainees are selected according to an annual plan drawn-up by the Ministry of Education in collaboration with the provincial boards of education and colleges of education. Seniority in teaching service is a basic criterion for the selection of participants in these programmes. The whole expenditure required for carrying out the in-service teacher education programmes is allocated in the budgets of both the Ministry of Education and the provincial boards of education. No tuition fees are paid by the participants to attend these programmes.

Education Extension Institutes for further education of teachers in service

In the last ten years increasing subsidies and financial assistance have been provided by the Government and the provincial Boards of Education to establish teacher education programmes and research institutes attached to universities, colleges of education, junior teachers'colleges and schools. At present there are three distinctive institutes offering systematic programmes for furthering the education of teachers and school administrators at three levels; namely, national, provincial and county.

1. National level. There are two types of institutes situated in Seoul which provide in-service teacher education programmes at the national level. The first type is concerned with improving the quality of teaching through the use of educational technology, and new methods in modern administration and management of classrooms and schools.

The two central institutes established for these purposes are the Central Audio-Visual Education Centre and the Central Institute of School Administration. The second type is emphasizing educational and psychological research for improving the educational system, administration, and curriculum organization. In addition to their research programmes these institutes have been organizing in-service programmes for teachers, teacher educators and high-level administrators in order to introduce innovative techniques in educational practices through research and experimentation. The Institutes are the Central Education Research Institute (CERI) and the Korean Institute for Research in Behavioural Science (KIRBS).

a) The Central Audio-Visual Education Centre. In 1959 a Demonstration Audio-Visual Centre was established in Seoul. Then in 1963 the original structure was reorganized into the present Central Audio-Visual Centre under the direct management of the Ministry of Education. The Centre has three sections: the management section, the research and distribution section, and the school broadcast section. The functions of the research and distribution section are to conduct studies in basic educational policies, to examine the educational methods in theory and practice, and to assist in establishing audio-visual experimental schools and audio-visual libraries. The section is also responsible for organizing programmes both at the central and provincial levels for furthering the education of teachers in service in the proper use of audio-visual materials for improving classroom instruction.

In 1971 three major teacher training programmes were organized in the Centre. The first programme was designed to train selected in-service teachers in the proper use of the radio and TV instructional telecasts to schools, and to enable them to guide teachers in the provinces through study group meetings and seminars in the appropriate methods and techniques in using such programmes for improving classroom instruction. The second programme was organized for selected teachers, principals and supervisors of the 300 experimental schools in which innovative techniques in the use of educational

technology, team teaching, and programmed instruction were introduced. In this programme, emphasis was placed upon methods of undertaking action research in the use of audio-visual aids to improve classroom instruction. The third programme was organized for research workers in the provincial boards of education. It aimed at co-ordinating the audio-visual research activities taking place in the Centre and the special cities and provincial Educational Research Institutes.

b) The Central Institute for Training in Educational Administration. This Institute was established in February 1970 for the purpose of enhancing the spirit of the national education charter, of improving the quality of teachers and administrators and fostering the sense of responsibility in the educational workers. The Institute is supervised and financed by the Ministry of Education and offers its services to all primary and secondary schools in the Republic of Korea. In 1971, the Institute provided a short-term 'crash' training course for 11,155 participants. The general objective of this training course is to orient the participants on the general policy and the charter of education in the Republic of Korea. The Institute organizes the course all the year round (40 weeks) except during winter and summer vacations. Each course lasts four days; two days for lecturing and general presentation and two days for group discussion. This is in addition to one or two days allotted to visiting educational institutions, industrial complexes and cultural programmes situated in and around Seoul. The Institute's annual capacity for in-service training is at present 12,000 participants, 300 weekly for 40 weeks. It has boarding facilities for 200 participants. All fees, travel expenses and accommodation allowances are paid for the participants from the Ministry of Education budget. Priority in training is given to teachers and administrators who work in remote areas and isolated islands.

Since 1972, courses in educational administration for promoting primary and secondary school teachers to the positions of vice-principal and principal are being offered for 240 hours (3 months) during winter and summer vacations. Gradually these courses will be offered in the Institute during the academic year in addition to holding them during the long

winter and summer vacations. In the meantime, the long-range plan is to expand the physical facilities by increasing the capacity of boarding accommodation to 300 participants and by putting up additional buildings for classroom instruction, laboratories and workrooms. In this plan the Ministry of Education intends to consolidate all facilities for further education of teachers in service which are attached at present in the junior teachers' colleges and centralize them in the Institute for achieving more quality control over their programmes.

c) The Central Education Research Institute (CERI). The Institute was founded in 1953 under the joint sponsorship of the Ministry of Education and the Korean Federation of Education Associations, and in 1966 was reorganized as a non-governmental juridical body but subsidized by the Ministry of Education. It consists of four departments and a section with a total of forty researchers and twenty administrative and clerical personnel. The main functions of the Institute are (a) to undertake research and development on educational theories and practices, (b) to guide educational practices and to disseminate research and development results, (c) to co-operate with other research institutes and to consult with and assist activities of various research groups, and (d) to exchange research associates and materials with foreign countries and participate in international research activities.

Since its establishment, CERI has carried out 190 research projects concerned with construction of educational and psychological tests covering such areas as intelligence, aptitude, critical thinking, attitude and achievement. Other research projects were concerned with the improvement of educational administration and finance, teacher training, curriculum organization, population education, and student guidance. Some of the projects investigated the feasibility and laid down guidelines for the introduction of innovative methods and new techniques for the improvement of classroom instruction. The Institute has also contributed in its research efforts to probe the teacher education system, both pre-service and in-service and recommended proposals for its development and enrichment.

The Institute takes special interest in acquainting teachers in service with the research findings in the improvement of teaching methods and providing them with the necessary guidance in the application of the innovative techniques in classroom instruction. This task is entrusted to the in-service training section attached to the Department of Institutional Planning and External Services in the Institute. The section organizes annually two workshops/seminars for a duration of one week each.

d) The Korean Institute for Research in the Behavioural Sciences (KIRBS). The Institute was established in 1968 as an independent, autonomous, non-profit organization directed toward the development of theories of behavioural sciences pertaining to the solution of social problems. It is also an educational institution for the training of prospective researchers. Presently, there are more than 60 staff members, including 30 researchers and consultants both full-time and part-time, specializing in various disciplines,and 30 administrative, technical and clerical personnel.

KIRBS is engaged in a number of research and development activities covering such areas as psychological testing, institutional methods, child development, educational technology, analysis of classroom instruction and organizational management. In addition to the research projects, the Institute provides workshops and seminars for teachers, principals and school supervisors to acquaint them with the research findings and provide guidance in the application of these findings to classroom situations.

2. In-service programme for introducing new orientation to curriculum. In the last few years the Ministry of Education in collaboration with the Central Educational Research Centres, provincial boards of education and provincial institutes of educational research has been emphasizing specific reform to take place in elementary and secondary schools in order to meet the rapid economic and social changes in the Republic of Korea. In this connection three major emphases have been placed upon changes in policy and curriculum

organization. The first is to acquaint teachers in service with the new policy of the Ministry of Education and the educational charter which are considered as the model upon which education is structured in the Republic of Korea. The second is the improvement of the spiritual and moral attitudes among teachers toward the teaching profession. The third is to acquaint teachers in service and school administrators with the innovative techniques in classroom instruction which include (a) offering radio and TV instructional programmes for classrooms, (b) improvement of classroom management, (c) inculcating new approaches in mathematics and science teaching, and (d) introduction of such techniques as programmed instruction, team teaching and mastery learning in elementary and middle schools.

In giving new orientation to subjects and introducing innovative techniques for classroom instruction there are several institutions which collaborate with the Ministry of Education in providing programmes for furthering the education of teachers in service. Among these are the following:

a) The Central Institute for Training of Educational Administrators provides four-day in-service education programmes for approximately 12,000 teachers, school administrators and supervisors per annum.

b) The Central Audio-Visual Centre and the 300 experimental schools, in co-operation with the provincial boards of education, organize programme activities, which include setting up seminars and workshops for teachers in service to acquire knowledge and skills in the innovative techniques in classroom teaching using radio and TV instructional programmes and the visual aids materials and equipment provided to schools.

c) The Central, provincial and university institutes for educational research organize short-term programmes for training elementary and secondary school teachers and administrators in new trends and modern approaches in the teaching of science and mathematics.

d) Systematic training of longer duration is undertaken for teachers in service to upgrade their qualifications and

provide them with full orientation to subjects in the curriculum and the use of new approaches and methods of teaching these subjects. Such training takes place in the in-service education institutes attached to colleges of education (university level) for secondary teachers and junior colleges of education for primary teachers.

3. Role of universities and other organizations in in-service education. In addition to the regular courses of 12 weeks, the colleges of education organize seminars and workshops for teachers and administrators to discuss and exchange experiences on issues regarding research projects, curriculum organization and administration.

The Institute of National Research, now attached to the College of Education at Seoul National University provides courses for teachers in the theory and practice of educational research to improve their competencies in carrying out action research in their schools. Seminars and workshops are also organized for teachers and principals in service to exchange experiences regarding the findings of the research of the Institute.

In addition, the Korean Federation of Educational Associations organizes conferences, seminars and workshops for teachers in service. It has been active in disseminating modern approaches in education through its publications.

Further education of teachers in service in Asian Countries

MALAYSIA

General background

Development of education. The duration of primary education in Malaysia is six years, of secondary education five years, subdivided into two phases of three and two years each; and of post-secondary education two years. Completion of the 13th grade (Upper VI Form) qualifies one for admission to university education. Nine years of formal education is now available to all children, as promotion is automatic from the elementary to the lower secondary levels and free of charge in the public sector. Schools are divided according to the language of instruction: Malay, English, Chinese and Tamil. Those who complete Form V of the secondary school (i.e., 11 years of schooling) can sit for the School Certificate examination and those who complete 13 years (Form VI) can sit for the Higher School Certificate.

In the past there were many different types of teachers for the different types of schools. Their qualifications and training varied. The different categories of teachers who were appointed before 1 January 1957 and are in service are the following:

1. Government teachers:

a) Educational Officers or teachers in the former Government Schools, who now all hold high positions in the Ministry of Education, or serve as Chief Education Officers, headmasters, and lecturers in teacher training colleges. These are holders of Honours Degree plus Diploma in Education, mostly expatriates.

b) Graduate teachers recruited from graduates of the Raffles College, Singapore, and Pass Degree Graduates of the University of Malaysia with a Diploma in Education or its

equivalent. Most of them now teach in the upper secondary classes or are assigned as headmasters or senior assistants.

c) Normal Class or college trained teachers (NC/CTT) - those who entered the government teaching service as teachers-in-training and attended and passed the weekend courses at Normal Class Centres established by the government; or those recruited for training at the secondary teacher training colleges established by the government, such as Kirkby and Brinsford Teacher Training Colleges, U.K., the Malayan Teachers' College, Penang, the Language Institute, Kuala Lumpur, and who, on successful completion of their training were posted to former Government schools. They mainly teach in lower secondary classes (Form I to III), but are not excluded from the upper secondary classes because of the shortage of graduate teachers and a few are now assistant organizers or organizers of schools in the State Education Offices.

d) Teachers of English in 'vernacular schools' (TEVS) - recruited from those who had passed Form IV in an English school for teaching English as a second language. They are now assigned to teach in the national secondary schools to meet the shortage of teachers.

e) Teachers in 'vernacular schools' - government teachers in the former Malay and Indian schools, who after 1 January 1957 continued as follows: (i) Uncertified Malay 'vernacular school' teachers. These have only primary education and no professional training, but teach in the national primary schools as general purpose teachers; (ii) Certified Malay 'vernacular school' teachers without SC or MCE - these have only primary education and some primary teacher training through the weekend Normal Class system or through correspondence and hence are known as T.U.O.S. (Trained Under Other Schemes). They are employed as general purpose teachers, headmasters or senior assistants in national primary schools; (iii) College-trained Malay 'vernacular school' teachers without SC/MCE - those who had primary education plus professional training at primary teacher training colleges.

These are employed in national primary schools as general purpose teachers, senior assistants or headmasters, or even as Assistant Organizers of Schools; (iv) Certificated or college-trained Malay 'vernacular school' teachers without SC/MCE but who had completed the one-year Language Specialist Course at the Language Institute. These were posted to national-type schools as National Language specialist teachers; (v) Handicraft, art and crafts instructors (Guru Tukang) in the former Government Malay primary schools, who had undergone courses in carpentry and woodwork only. They are now employed as general purpose teachers; and (vi) Uncertificated Tamil vernacular school teachers.

2. Non-Government teachers on the Trusted/Benham Scale - those who were serving in former English aided-schools run by the missions or in other specified agencies as Graduate teachers or as Normal Class/College-trained teachers, and are now appointed in government schools or board schools placed on salary scales identical with those of their counterparts in Government service.

3. Unified Teaching Service (UTS) Teachers - those teachers in assisted schools who, beginning 1 July 1961, opted to transfer into the UTS. Among them are trained teachers; teachers with an honours or pass degree of the University of Malaya or its equivalent but no Diploma in Education, who served as underqualified graduate teachers; and Indian graduate teachers. The Unified Teaching Service brought all teachers in assisted schools into a single scheme where remuneration is based on the type of teaching performed by teachers and the professional training and academic qualifications possessed by them.

d) Entitled teachers - those who continue to serve because they were teaching in the former partially assisted or independent Chinese schools which were converted into fully assisted conforming schools from 1960 onwards, but who do not possess the requisite qualifications for absorption into the Benham or UTS scales. They are (i) holders of Chinese degrees; (ii) teachers with Government Senior Middle Three Certificates or its equivalent, (iii) teachers with qualifications lower than Government Senior Middle Three.

e) Temporary teachers - untrained or otherwise unqualified teachers recruited on a temporary basis to meet the shortage of teachers in fully-assisted schools.

f) Missionary school teachers - those serving in fully-assisted mission schools.

g) Islamic religious teachers in assisted secondary schools - those who have the minimum qualifications of Form IV of a recognized religious school or who possess the High Certificate of the Muslim College, Malaya.

h) Guru Ra'Ayat - those employed in the Ra'Ayat schools which the Government has either taken over or is in the process of doing so. Ra'Ayat schools were built by the community through public contribution and were staffed by teachers who lacked academic qualifications and had virtually no professional training.

The above enumeration should show the almost bewildering variety that was the teaching at the time Malaysia attained independence in 1957. On the eve of independence, a high-power Education Committee made its report - the Report of the Education Committee of 1956 (the Razak Report). Based on the recommendation of the Report the Ministry set about co-ordinating the different training courses in order to produce teachers with comparable qualifications through a common pattern of teacher training for all types of schools.

Recruitment policy. The creation of a Council in the Ministry of Education to be responsible for the formulation of educational policies and for making decisions on major issues was recommended in 1971. A Personnel Management Division was created within the Council specifically for the recruitment and assignment of teachers, staff relations and career development.

1. The minimum qualifications required of primary and lower secondary teachers in Malaysia were set out, in the context of the existing situation, by the Aziz Report and implemented beginning June 1971. These are:

a) Academic Teachers (Primary/Lower Secondary) -

SC/MCE/SPM [1] plus MTC/DTC [2] or other equated academic and professional qualification.

b) Trade teachers vocational (Secondary) - SC/MCE/SPM plus Trade Teacher Training College Certificate or other equated academic and professional/industrial qualifications.

c) Technical teachers (Lower Secondary) - SC/MCE/SPM plus Technical Teacher Training College Certificate or other equated academic and professional qualifications.

d) Religious teachers - SC/MCE/SPM plus Form IV Arabic plus MTC or other equated academic and professional qualifications.

2. At present there are 13,122 teachers in service with School Certificate qualification; 8773 teachers with Lower Certificate in Education with ± courses earned at DTC qualification; 1,522 teachers with only LCE qualification; 15,440 teachers with less than LCE with ± courses earned at DTC qualification and 3,427 teachers with qualification described as unclassified. This makes a total of 26,844 teachers in government and non-government service whose qualifications may be considered below par, owing mainly to the raising of minimum academic qualifications for admission into the different levels of teaching.

Organization of in-service education

In West Malaysia[3] the Ministry of Education has a Teacher Training Division under a Director of Teacher Training. The Ministry of Education is responsible for the formulation of policy while its Teacher Training Division is in charge

1. School Certificate/Malaysian Certificate of Education/ Sijil Pelajaran Malaysia.

2. Malayan Teachers College/Day Training College, Certificate.

3. West Malaysia: Peninsular Malaysia; data for East Malaysia (Sabah and Sarawak) are still forthcoming in specific detail.

of the execution of policy. In-service training of teachers is conducted or co-ordinated by the Teacher Training Division, which organizes refresher courses, in-service training, seminars and workshops for both primary and secondary school teachers. There are evening classes in a number of centres, which cater to those who are over-age; who have been unable to continue their education in the regular schools; who are employed and wish to improve their general, technical or commercial education; or who wish to study Bahasa Malaysia. No fees are charged from teachers in service, but others have to pay for attending these courses. Government has given every teacher, permanent or temporary, without the minimum qualification, the opportunity and encouragement to obtain the minimum required academic qualification and training through vacation courses organized centrally or at the State level.

There are permanent centres of training, each with its specialized area of content under an Integrated Teacher Training plan as follows:

Malayan Teachers College (Penang)	-	Mathematics and Science
Malayan Teachers College (Kuala Lumpur)	-	Geography and Music
Technical Teachers Training College (Kuala Lumpur)	-	Industrial Arts and Trade Subjects
Malayan Teachers College (Johore Bharu)	-	Agriculture, Science and Home Science
Maktab Perguruan Bahasa	-	Malay, History/Geography
Language Institute (Kuala Lumpur)	-	Music (in Malay only)
Specialist Teacher Training Institute	-	Crafts, Home Science, Physical Education, Teaching of the Blind and Deaf, Audio-Visual Aids.

Malaysia

There is already in effect a new integrated curriculum in Malaysia - the primary teacher training course offered at the Day Training College and the lower secondary training course of the Malayan Teachers College have been combined. As a corollary to the raising of the minimum entrance qualifications for primary and secondary teacher training, there is now at work the principle of parity, as a consequence of which the Education syllabuses were co-ordinated and there is equal emphasis on content teaching in both types of training.

New proposals for improving educational competencies of teachers are before the Ministry. In June 1971, an organized effort was made to look into other methods of providing in-service training for those teachers who are not selected to attend formalized courses or training. One suggestion was to have a scheme of self-study organized and prescribed by the Ministry of Education to be undertaken by the teachers themselves either on the school premises or at some other centres where library and other facilities are available. Another was to leave the details of the scheme of study to be worked out by the teachers themselves in conjunction with the headmasters, and at the end of the period of self-study, to require them to submit a report for assessment by the training unit of the State Education Office or the headmaster, depending on the nature of studies. It was proposed also that the system employed for training officers in the Malaysian Home and Foreign service could be used. The officers are required to pass general examination papers during their period of probation; they are expected to prepare for the examination papers on their own during the period of probation and to sit for prescribed examinations, failing which they would not be allowed to cross the probationary bar. This system could well be applied in the case of teachers not only to attain prescribed qualifications but also to enhance their value to the service.

Types of in-service programmes

The existing organizational pattern of in-service programmes for teachers include full-time courses, part-time courses, vacation courses and refresher training seminars and workshops.

Courses chiefly for untrained teachers in primary and secondary schools are held normally during the weekends, during term time or during school vacations. Generally such courses go on for two to three years. These are organized by the Ministry of Education and conducted through the teacher training institutions at primary and secondary levels.

Special courses of a duration of three months to one year are organized in areas like Guidance and Counselling, Audio-Visual Education, Educational Television and School Radio Broadcasts, and Library Science, for selected participants. These courses are held in response to the special needs of schools or new educational programmes of the Department of Education. They are mostly held under the auspices of the Ministry of Education with the help of resource persons from training institutions and other places. Such courses also serve as supplementary courses for teachers to make them subject specialists.

Teachers attending in-service courses organized by the Teacher Training Division in the various teacher training institutions during vacations are nominated by the Chief Education Officers of the States concerned. Salary increments are given to the teachers on completion of these courses. They are also provided with full board and lodging for the duration of the courses.

Seminars and workshops of short duration are organized for teachers by a number of agencies like Teacher Training Institutions, the CEO, the Inspectorate and the University on teaching methods, guidance and curriculum content. All major subjects taught are offered. This helps keep teachers abreast of changes in content and methods and update their basic knowledge and capabilities. Teachers' unions also conduct seminars and workshops. The training institutions also extend their services to the teachers in nearby schools through visits of lecturers as well as by organizing occasional workshops and seminars.

A full-time one-year course leading to the Diploma in Education is organized by the Faculty of Education in the University of Malaya, and teachers in service also undergo this course.

Incentives for further education. With the implementation of the recommendations of the Aziz Report on the teaching service, many incentives have been provided for further education in terms of salary increments and promotions. In the proposed salary structure and scales for teachers, the following elements are subject to scrutiny by 'bars' or boards of standards: probation, efficiency, promotions, vacancies, and the short supply of women teachers. As a result of this, there is a continued striving for higher academic and professional qualifications among teachers in the service. At the same time, there is strong motivation among untrained teachers to obtain their required academic qualifications and professional training. The Aziz Report had pointed out, "If after having been provided with the opportunity for a reasonable period, they fail to obtain the required standards then they have only themselves to blame if the Government, in the public interest, dispenses with their services, especially in the case of temporary teachers whose services could in any event be terminated namely by notice."

There is an effort at encouraging the teachers through the creation of an Education Honour Society. This is to commend and acclaim deserving teachers whose membership will not be by application but by acclamation. Similarly, the Malayan Journal of Education which the Inspectorate publishes will carry a commendation page with each issue, pointing out schools or individuals who have merited special comment on some praiseworthy work.

The granting of incremental credits for qualifications obtained during service has recently been re-examined. According to findings of a Ministry survey, the granting of incremental credits tends to disrupt seniority of officers. Since there is a continual striving for higher academic and professional qualifications among teachers, it was suggested that the time has come to review the whole concept of rewarding officers for obtaining qualifications while in service. For example, it would be more attractive to a young teacher to be given a substantial amount by way of bonus in addition to the cligibility for promotion or to move laterally to a better

salary scale. To him, a bonus of $3,000 would be more helpful than two increments of $60 per month; to the Government, this may be more economical providing the teacher's service is available throughout his entire career; and to the service, the granting of a bonus would not affect the question of seniority. It was suggested that the Government should from time to time list the academic and professional and specialist qualifications which teachers may obtain during their service to qualify for a bonus. No penalty should be imposed on a teacher who fails to obtain a qualification but, before he embarks upon an approved course, he should apply to the Ministry for permission. Certain conditions regarding future service and the prescribed time limit during which this qualification should be obtained will be set. Failure to obtain the qualification within the prescribed time would disqualify a teacher for the bonus.

In-service programmes for upgrading qualifications

There are separate institutions for the initial training of teachers for the primary grades I to VI and for the lower secondary grades VII to IX. In 1971, there were 6 institutions for primary teacher training and five institutions for lower secondary teacher training in West Malaysia.

A pass in the 9th grade (Lower Certificate of Education) has been the prescribed qualification for admission to the primary teacher training course, and so a three-year course made up of two years of full-time training followed by one-year of full-time teaching and weekend training for the candidates with the Lower Certificate of Education was conducted in the primary teacher training institutions. Now only those who have completed 11th grade are being selected; the course is therefore limited to two years. Untrained teachers in service for Malay primary schools taught part-time in schools and received weekend training under either a two-year full-time scheme at Sultan Idris Training College or at the Malay Women's Training College; or as three-year weekend scheme in local centres with part-time teaching in schools. These were referred to as 'Training Under Other Schemes' (TUOS); also called Normal Class Training. This was discontinued in 1957.

An 11th-grade pass with a first or second division in the School Certificate Examination is the prescribed qualification for admission to the secondary training course. Its duration is also two years. For this two-year basic pre-service training, teachers in service with at least the SC/MCE and a pass in Malay or English and two other credits are now admitted for in-service training as full-time candidates. A special two-year course was conducted until recently for those who had qualified for the Higher School Certificate with which, after one-year of full-time training in the secondary teachers' training institution, they were posted to schools to teach, and required to attend only weekend training courses in education.

Due to a shortage of trained teachers for the lower secondary grades (as a result of abolishing in 1964 the Malayan Secondary Schools Entrance Examination at the end of grade VI and establishing three years of comprehensive education in the lower secondary forms), a crash programme of part-time and weekend training in Regional Training Centres was organized between 1965 and 1967 for teachers in service. Thirty Regional Training Centres were established in the country. The entry qualifications and age limits were kept the same as those required for the residential secondary teacher training institutions, and students at these centres followed the same syllabuses and curricula of the basic two-year course. Students under training were however attached to secondary schools, where they taught for four days a week; during the weekends they attended lectures given by staff members drawn from the residential training colleges and picked teachers from schools. At the end of their two-year period of training, they took the same examination as the students from the residential training colleges. 2,800 students were recruited in 1965, 1,700 in 1966 and 1,500 in 1967. The course has since been abolished.

A one-year Supplementary Course was given to secondary trained teachers who had two years of teaching experience after training until a few years ago in a few secondary teacher training institutions to enable them to teach in grades X and XI. Teachers for these upper secondary classes are presently being trained more and more in the Universities in West Malaysia or universities overseas. A Diploma course in

teaching, of one year's duration and an M. Ed. course of two years' duration are available in West Malaysia for graduates of universities. In these courses, teachers in service are being selected for training every year along with newcomers.

In-service training in the Malay Language has been begun to assist serving teachers in primary and secondary schools to teach in the Malay medium in accordance with the national policy of working toward a single medium of instruction in all schools. This training programme is provided through a three-month course in the teacher training colleges during term time or through a vacation course spread over three school vacation periods.

Three-year vacation courses were provided at convenient centres also for upgrading the Islamic religious teachers having only Form IV qualifications and no professional training.

For the uncertified Tamil 'vernacular school' teachers, in-service courses organized by the Ministry are given. They have reached Form IV and have teaching experience but do not have professional teacher training qualification. Courses are given to make them reach the minimum standard for a primary school teacher.

A correspondence course (Latehan Por) for untrained Malay primary school teachers, who did not possess the minimum academic qualification of three years' secondary education, especially in rural areas, was in operation from 1957 to 1964. Its duration was three years.

The Ministry of Education continued to admit Guru Ra'Ayat - speaking teachers for training until 1961, especially in certain States. From 1967, a three-year vacation course has been offered for their training at convenient centres. Selection of participants is made by the Ministry through a special entrance examination. Qualifications should be a minimum of LCE/SRP plus a pass in Darjah Pelateh III.

Most upgrading courses are now vacation courses and are obligatory as teachers who fail to complete certain courses for upgrading qualifications are, beginning 1972, penalized by being denied increments. It was also recommended in 1971

that teachers attending a compulsory professional course should meet all the expenses except tuition fees and cost of teaching materials. According to the Teacher Training Division this recommendation is now being implemented.

Teachers of science and mathematics in the primary and lower secondary levels who have the Higher School Certificate qualification (13 years of schooling) are encouraged to proceed to universities to take university degrees so that they may teach these subjects. Those admitted to teacher training institutions receive free tuition and a stipend.

Scholarship or study leave is granted to teachers in service for going into institutions for specialization in subject areas or in advanced disciplines related to teaching theory and methods or in courses on Educational Administration and Planning.

In-service courses for updating and enrichment

The Teacher Training Division conducts its own in-service courses for raising the competencies of teachers and also acts as the co-ordinating body for courses conducted by other divisions of the Ministry. These include:

1. Courses conducted by the Teacher Training Division -
   a) Vacation course for Guru Ra'Ayat;
   b) Vacation course for Temporary Tamil School teachers;
   c) Vacation course for Temporary Chinese School teachers;
   d) Vacation course for Temporary Teachers of National Language in Non-Malay medium schools;
   e) In-service course in Malay Language for teachers in English medium primary schools;
   f) Vacation course for Islamic Religious teachers;
   g) Administrative course for Heads of Primary Schools.
2. Courses conducted by the Schools Division -

a) In-service course in Integrated Science (Lower Secondary Schools);
b) In-service course in Nuffield Science (Upper Secondary Schools);
c) In-service course for Laboratory Attendants/ Assistants;
d) In-service course in New Mathematics;
e) In-service course in Primary Science;
f) In-service course in Primary Mathematics;
g) In-service course in Health Education;

3. Courses conducted by the Federal Inspectorate -

a) Primary Mathematics;
b) Primary Science;
c) Art and Crafts for Primary School teachers.

4. Courses conducted with UNICEF Funds

a) Home Science;
b) Educational Guidance and Counselling

5. Courses conducted by the Technical Education Division -

a) Electrical installation;
b) Sheetmetal and welding.

The vacation courses are offered during the long vacation break of seven weeks. For attending these courses, free board and lodging is generally given, but no certificates are issued. Salary increases are given only to those who attend the vacation courses conducted by the Teacher Training Division.

Refresher courses. Participants in these courses are limited to those who had obtained the Diploma in Education or MTC or DTC training. A certificate is awarded upon completion of these courses, and as an incentive, attendance at refresher courses and grade attained are taken into account in promotion or other such courses. These are taken during the two short vacations or during the long vacation. Financial bonuses are also given.

Seminars, workshops, and conferences are also held as part of refresher courses. The 1971 seminar-workshop held in Penang was a re-examination and assessment of the primary teacher training curriculum. Attendance at such conferences is through selection by the Ministry. Entrance requirements are also determined by the Ministry.

To keep teachers abreast of changes in content and methods, courses are held and periodic workshops, seminars and short courses on teaching methods, guidance and curriculum content in all major subjects taught in the school system are organized. Recruitment is done by Chief Education Officers who in turn depend on Headmasters and Organizers to nominate participants, keeping in mind the need of the school. Increments and financial bonuses are given as an incentive to those who successfully complete the courses.

NEPAL

General background

The New Education Plan and teacher education. Until 1972, the school system in Nepal was made up of five years of primary school, three years of middle school and two years of high school education. There are five Primary School Teacher Training Centres in Nepal, admitting those who had passed grades VIII, IX and X for a one-year course and those who had passed grades VI and VII for a two-year course. They were all qualified to teach at primary level. Apart from these regular training courses, there were in-service courses. Primary school teachers in remote areas were given 6 or 8 weeks of training on the spot by mobile teams, while other primary school teachers in service were trained through extension courses of two months each in three consecutive cycles. The Intermediate Education (I. Ed.) qualified teachers; i.e., 10-year school leavers with two years training in the College of Education taught grades VI and VII of the middle school. Grades VIII, IX and X were usually taught by those with Bachelor of Education (B. Ed.) degree; i.e., two years of training after I. Ed. or one year of training after a four-year course leading to a university degree in arts or science.

A New Education Plan was drawn up in Nepal in 1970 which embodies the guidelines for reforming the educational system. According to the Plan, the new system is to consist of three tiers, with three years in the primary, four years in the lower secondary and three years in the upper secondary stages of education. This is being implemented in a phased programme, with the target of all the 75 districts of the country to be covered in a period of five years, beginning 1972. This change has profound implications for the teacher training system.

Nepal

At present, approximately 25% of the teachers in the primary and middle stages are trained for primary teacher training. As selection has been on the basis of quotas allotted according to districts, there is a fair distribution of trained teachers among schools in different parts of the country.

Recruitment policy. The qualification requirements for recruitment as teachers and/or admission into different levels and kinds of teacher education courses in 1972 are as follows:

The minimum qualification for a primary teacher is 8th grade pass and one year of training, although many among those recruited were S. L. C. holders (Matriculates) with one year of training. The two-year course for trainees with 5th grade pass testimonial from specified 'educationally backward areas' (18 out of 75 districts) has now been abolished. Initial training is given as in-service training to those recruited without pre-service training.

The qualifications for secondary teaching were two years of teacher training for matriculates; two-year B. Ed. in the case of Intermediate graduates and one-year B. Ed. in the case of first degree graduates. I. Ed.'s generally teach the middle grades (including the primary grades IV and V where the new scheme is in operation), but some I. Ed.'s teach in the high schools as well. High school teachers are generally university graduates (B. A. or B. Sc.) with or without B. Ed. degree. High school teachers of Agriculture, Business Education, Home Science, Secretarial Science, and Draftsmanship are graduates of Vocational Teacher Training Courses.

Organization of in-service education

For the implementation, administration and evaluation of the New Education Plan, certain changes have been made in the administrative structure of the Ministry of Education. Teacher training which was under the Teacher Training Division of the Ministry of Education is now the responsibility of a Training Section. The College of Education, the Primary School Teacher Training Centres and other training institutions are placed under this section.

Organization of in-service education

In-service education is carried on by the Ministry of Education, College of Education and the National Vocational Training Centre at the Central level and by the five primary teacher training centres at the local level. The Extension Division of the College of Education organizes courses for the Ministry and conducts them on approval of the Ministry. The College of Education Extension Centre at Birganj serves both primary and secondary teachers in service while the other extension centres are for primary teacher training only, although they are expected to engage in lower secondary or middle school training shortly.

A Teacher Education Workshop held in 1971 pointed out the shortcomings of the present practices, and recommended changes in the teacher education programme and its curriculum for introducing the new education scheme. Currently, committees of teachers, administrators and curriculum experts are engaged in preparing new curricula on the basis of the New Education Plan.

The entire education system in Nepal is undergoing fundamental changes. Teachers will be trained with a new orientation in the contents and methods of the subjects to be taught under the new scheme. The proposals regarding teacher training are:

1. To increase the number of primary teacher training institutions to meet the needs of expansion of schools.

2. To open extension centres in the districts, as the regular teacher training centres cannot meet the requirement for trained teachers - these centres will offer a three-cycle extension course to in-service teachers, each cycle being a period of three months' duration instead of two months' as before. Practice teaching should be included in all the three cycles and its approach made 'clinical' and to cover each subject-area of the primary school curriculum. At the second level there will be no extension courses, but short-term training will be offered in different subject areas by the College of Education.

3. To acquaint high school pupils with the principles of teacher education by offering a Pedagogy course as an optional subject at the high school stage, in order to supplement the number of trained teachers in primary schools with teachers who have some knowledge of pedagogy and to attract more candidates to the profession.

4. To start a mobile teacher training (Extension Course) scheme using graduates who have undergone teacher educators' training.

With regard to the regular training of teachers, the following steps are contemplated to improve quality:

1. The PSTTC's will prepare teachers for the first three years of school only. The qualification of the trainees is to be raised to SLC (10-year School Leaving Certificate) and the duration of training is to be two years. But as there will be a shortage of qualified candidates, the primary teacher training course will continue to be offered to non-SLC's with a slightly different curriculum. SLC holders with one academic year of training will also teach primary school. They will be classified as teachers 'with SLC + training'; only when they have taken the second year's course will they get the Certificate in Education.

2. The College of Education will prepare lower secondary teachers through its I. Ed. programme, and secondary teachers through its B. Ed. programme. Admission qualifications to I. Ed. and B. Ed. programmes are to be raised to intermediate Arts and Bachelor of Arts respectively. Both programmes will extend over a period of two years. But those who wish to teach after one year of study in either of the two levels will be classified either as teachers 'with I.A. + training' or 'with B.A. + training'.

3. The first year of training at each level of teacher education will be oriented toward imparting practical methods and contents, while theory portions are to be given in the second year. Persons taking the first-year course will be able to teach school with some teaching orientation, and return later to join the second year's course.

Increment in salary is to be given to those who teach after completing the first year of training. This will be an incentive for attracting candidates for training, and a provision for returning later, at any time they like, to take the second year's course, will also act as an additional incentive. A further incentive is seen in the provision that a non-SLC-trained person who acquires SLC qualification later need take only the second year's training course to qualify for the Certificate in Education. The same principle is applicable in the other levels also.

Two UNICEF-assisted Projects, one for the training of Science Teacher Educators and the other for the training of Primary Teacher Educators, are innovative programmes started recently. In addition to theory classes in all subjects of school science and principles and methods of teaching, the Science Teacher Educator Training Project includes laboratory work, field work, preparation of science teaching aids and training in conducting on-the-spot training of teachers. The Primary Teacher Educator Training Project includes training in conducting teacher training programmes, particularly remote area teaching training programmes; a study of the principles and methods of teaching three primary school subjects (Science, Language and Arithmetic); primary school curriculum, and primary teacher training curriculum; unit and lesson planning on primary school and primary teacher training subjects; preparation of teaching kits on primary school subjects; primary school surveys; research methods and statistics; and practice teaching and supervision of student teaching.

A Science Teaching and Enrichment Project is also organized by the Ministry of Education with the help of UNICEF. Programmes of curriculum development and teaching are organized and conducted by the Ministry of Education for language teaching, social studies and physical education also, and seminars or workshops are conducted every year. For organizing in-service programmes for English teaching, there is a separate agency under the Ministry.

Short, weekly radio programmes for teachers, both primary and secondary, were begun in 1971. The Education

Materials Centre prepares the programmes, under the guidance of an expert from the British Broadcasting Corporation. This project has also been sponsored by UNICEF. No evaluative study of the project has been made so far.

The approaches adopted in the above projects are innovative. All of them are strongly biased toward imparting 'clinical experiences' with a minimum of organization, and that too contextually. The Science Teacher Educator Training Project enables the trainees to teach teachers on the spot, writing lesson plans, unit plans and even manuals. To do so, they are shuttled between the training centre and the schools, relating science teaching with everyday happenings in the environment, with the view of simplifying much of the high school science teaching. The Primary Teacher Educator Training Project aims primarily at orienting the trainees toward primary curriculum and primary teaching with its phases of study of the primary curriculum, unit planning and lesson planning, and student-teaching at primary schools and makes them utilize these experiences at the teacher training centres. Thus this programme is indirectly a process through which the primary teaching could be related with the training at the primary teacher training centre, and thus infuse the training programme with core experiences from the schools. The training in remote areas makes the untrained local teachers work rigorously for two months in the local schools, under the supervisors. Theory is taught nominally, for about 20% of the time.

Types of in-service courses

The In-service Teacher Training Courses conducted in 1971-72 were as follows.

Course	Duration
- Primary Teacher Training (Regular)	10 months
- Primary Teacher Training (Extension)	3 cycles of 2 months each
- Lower Secondary School Teacher Training (I. Ed.)	24 months with two vacations of 2 months each

Types of in-service courses

Course	Duration
- Secondary Teacher Training (one-year B. Ed.)	12 months (two months vacation)
- Secondary Teacher Training (two-year B. Ed.)	24 months with two vacations of 2 months each
- Vocational one-year programme (crash programme)	12 months with two months vacation
- Vocational two-year programme (crash programme)	24 months with two vacations of 2 months each
- Vocational four-year programme	4 years with four vacations of 2 months each
- Master Degree Teacher Training	2 years plus the time taken for writing thesis.

All regular courses are taken as in-service courses by those already recruited as teachers without training certificates. In the extension programme for primary teacher training, the subjects offered for the regular training course are covered in three successive periods of two months each, (later to be increased to three months).

In-service education is used in Nepal mainly for the purpose of imparting the initial training of teachers. Not more than 25% of the teachers are trained at the primary and middle levels of teaching. Hence not much attention has been given to their continuing education. The New Education Plan has however incorporated provisions for enabling trained teachers to upgrade their qualifications. The provisions made for intermittent study are innovative in that they take into account the situation in the country and are calculated to meet the need for having more of trained (though inadequately) teachers to begin with, and fully trained teachers later at all levels.

For the in-service seminars and workshops, no distinction is made between trained and untrained teachers in the

selection of participants. Those who teach the subjects concerned are recommended by the headmasters of schools, and selection is made by the Ministry or the College of Education as the case may be (in the latter case it has to be approved by the Ministry). The number of participants selected for certain programmes is limited to 30, while for General Science or the STEP more than 100 teachers are selected. Credits are not so far given for courses taken, but may be later. The teaching staff are drawn from the College of Education and from foreign consultants.

University Departments do not participate at present in conducting in-service courses for teachers, but there is now a proposal to start an Institute of Education in the University to take care of all pre-service and in-service education of teachers.

There is no provision for paying higher salaries to anyone on the basis of his higher qualification when he is appointed to a post as salaries generally go with the post. Hence acquiring higher qualifications while in service does not automatically lead to higher salaries.

In-service education for upgrading qualifications

There is no systematic provision for the further education of trained primary level teachers. A trained primary school teacher does not get any preference for admission to the College of Education for higher studies, nor is one entitled to leave with salary for higher studies. However, provision is now made in the New Education Plan for primary school teachers, who have qualifications below matriculation, to appear for one or two papers every year and acquire credits for it toward qualifying for SLC. Teachers in service who have the SLC qualification can enrol during vacations in the College of Education and complete the requirements for I. Ed. and B. Ed., or qualify to be recognized as trained teachers by taking training courses during regular semesters. They can also appear privately for the examinations conducted by the Tribhuwan University after a certain number of years of service to improve qualifications. This is a privilege which

is open to teachers and non-teachers alike, but non-teachers will not be eligible for it after 1975.

A graduate trained teacher may earn a Master's Degree (M. Ed.) in the College of Education of the Tribhuwan University if he is selected, but he is not entitled to get leave with pay for the period. No Nepal government scholarships are available for higher studies. A few foreign and international scholarships are available, as well as opportunities for foreign training through bilateral arrangements with foreign countries. USAID, which helped to set up the College of Education in 1956, has been a major source of help in the further study programme of teachers. In 1970-71, 69 teachers, mostly high school teachers, were sent abroad for studies in education - to India and Sri Lanka for short-term studies in curriculum development; to Pakistan for a four-year course in agricultural studies; and to the American University of Beirut for higher studies. Most of the teachers sent to the United States for taking Master's Degrees in Education are from the College, but this programme is open to teachers of high schools too, if their knowledge of English is adequate.

Further education for updating knowledge and skills

The following programmes are available for primary school teachers:

1. Short workshops are sometimes conducted, especially when foreign experts are available. These carry no credits.

2. A 'Study Group' programme has been devised to improve the teaching competencies of untrained teachers. Teaching notes are prepared in Normal School Workshops and sent to untrained teachers by the Ministry of Education through the supervisors. The teachers try them out in their classes under the supervision of trained teachers, and points are clarified by discussions following the lessons. There is a form in which the teacher-in-charge has to report information regarding the number of lessons taken in this way to the Ministry.

For middle and high school teachers, the College of Education conducts in-service courses extending to one or two

months in subjects like science teaching, mathematics teaching, English language teaching and testing and measurement. These are attended by both untrained teachers and the I. Eds. and B. Eds. together. At least one course is conducted every year in science and mathematics, in which 20 to 30 teachers are admitted. Courses are arranged also for the in-service training of supervisors and inspectors in administration and supervision of schools, as and when need arises, in the College of Education, jointly by the Department of Education and the College, and conducted by the college staff. The selection of candidates for this course is done by the Ministry, but the programme is prepared and run by the college.

The PRIME. Mathematics teachers of secondary schools in Kathmandu meet once a month to discuss the academic problems faced in teaching the subject, under a curriculum development project called PRIME (Programme for Revision and Improvement in Mathematics Education). Both trained and untrained teachers attend these meetings which are held alternately in one of the 14 schools in the Valley included in the project. 35 schools out of the 400 high schools in the State are involved in the PRIME; the schools and the teachers in each school have been selected on the basis of their own interest. Notice of meetings is given by the PRIME officer, who is the Professor of Mathematics in the College of Education. The objective of PRIME is to prepare new programmes in mathematics (not 'New Mathematics' in the technical sense), making it interesting and easy to understand, and train teachers to handle this programme effectively. Mathematics professors, Peace-Corps Volunteers and teachers in the schools involved in the project co-operate in writing lessons. The first draft is written by one of the three and the other two review it. The final draft is then tried out in the teacher training programme in the College of Education so that the trainees in the College can get oriented to it. They are then tried out in the concerned schools. Another way of preparing drafts of lessons is to get them done in workshops of teachers held for the purpose by PRIME. Teachers in the schools involved in PRIME then send their comments to the PRIME office to serve as feedback for revision. The tryout of lessons is also carried out in schools

in remote areas. After a year's trials the materials are revised and, in their final form, printed. It is proposed to have an evaluation of the PRIME and a comparative study of its effectiveness as against the ordinary mathematics programme by an unbiased agency like the Research Division of the Ministry.

Science teaching improvement programmes. There are two programmes of in-service education for improving the teaching of science.

1. The first is the General Science Programme conducted by the College of Education. This was organized originally for training science teacher educators with Unesco assistance. Unesco experts train teacher educators in conducting in-service science workshops at the College of Education, after which they go to different parts of the State to organize short-term and on-the-spot training courses, of up to 6 weeks. The training is conducted on the basis of the manuals prepared by them in the workshops at the College of Education, mainly on methodology of teaching science and on the use of locally made materials and other local resources. Follow-up studies have been made, but no assessment on the basis of the performance of students.

2. The second is the Science Teaching and Enrichment Programme (STEP) - It is an innovative and experimental programme financed by UNICEF and conducted by the Ministry of Education. It tries to develop curricula, trains teachers in service and distributes materials. The Ministry organizes the workshops for teachers. Teaching materials are prepared by Peace-Corps volunteers. The training is conducted by the staff of the College of Education and the Peace-Corps volunteers. The workshops usually last for from four to six weeks, and are held at different centres in the State.

The innovative approach of the STEP courses lies in the emphasis that they give to developing the right attitudes (rather than merely giving information) towards science in the young pupils by training them in observation, seeing relationships among what is observed and opening up their minds to enquiry. Essentially, STEP is a curriculum development

project, and does not include in it a regular teacher training programme. This is where it is perhaps failing. Four to six years have passed, and it could no more continue as a pilot project. The stage has come when it should be incorporated in the school curriculum. As teachers have not been trained for teaching STEP, except perhaps the few who are involved in the project, it is found difficult to place it in the regular school curriculum. The Ministry is now examining the pupils taking STEP in order to decide on the future of the programme.

PAKISTAN

Background of the educational system

Historical background. In Pakistan, the Central Ministry of Education and Scientific Research is responsible in an advisory and co-ordinating capacity for the administration of education and teacher education. The Education Department in each province is fully in charge of the public school system and training of teachers.

The educational pattern consists of five stages which include five years of primary education, grades I to V; three years of lower secondary or middle education, grades VI to VIII; two years of upper secondary or matriculation education, grades IX and X; two years of intermediate education, grades XI and XII; and two to five years of higher education in colleges and universities.

The Government of Pakistan announced in 1970 a New Education Policy in which considerable emphasis was given to the promotion of quality education through improving the existing programmes in the teacher education institutions and furthering the education of teachers in service.

Recruitment of teachers. For the recruitment of teachers in the public schools there are specific standards of professional qualifications prescribed by the Government. These standards vary according to the level of education for which teachers are recruited. The statutory qualifications prescribed for the recruitment of teachers at different levels of education are as given on the next page.

Level of Education	Grade	Qualifications of Teachers
a) Primary	I-V	Secondary School Certificate (Matric) with one year's professional training.
b) Middle	VI-VIII	(i) Bachelor's Degree with degree in education (ii) Higher Secondary Certificate (Intermediate) with professional training.
c) Secondary (High)	IX and X	Bachelor's Degree with diploma in Education.
d) College	XI to XIV/XV	Second class Master's Degree.
e) University	XV and XVI	Second class Master's Degree.

Before 1968 the duration of the teacher education course was one academic year after the secondary school certificate. There have also been other teacher certificates to qualify teachers for teaching in primary schools like the Junior Vernacular Certificate (J. V.) obtained after eight years of formal schooling and one year of teacher education, and the Senior Vernacular Certificate (S. V.) obtained after ten years of formal schooling and one year of teacher education. These two teaching certificates as well as others were gradually replaced by the Primary Teaching Certificate (P. T. C.) in 1968. In order to obtain this certificate the student was required to undergo two years of formal schooling. The duration of the P. T. C. has however been reduced again to one year in view of the need to meet the demands of quantitative expansion. At present, there are 53 primary teacher training centres with an annual output of about 10,000 teachers.

The middle school teachers should possess the Teaching Certificate (T. C.), if they are not university graduates. To obtain this certificate the students enrol in teacher education institutions for one year of pre-service training. The

requirement of admission to these institutions is the Certificate of the Faculty of Arts (F.A.) or the Faculty of Science (F.Sc.) from the intermediate schools. In other words, they should acquire twelve years of schooling in order to be admitted to these institutions for preparing teachers for the middle school. The curriculum of this one year of teacher training emphasizes professional foundation courses, teaching methods and techniques, and student teaching.

For the upper secondary schools the prescribed requirement for recruiting teachers is the Bachelor's degree in education (B. Ed.). Graduates from universities with Bachelor's degree in Arts or Science (B.A. or B. Sc.) are admitted to the Teacher Training Colleges to undergo one year of pre-service teacher training. These colleges are normally affiliated to the universities, which prescribe the curriculum, set the final examination and award the degree of B. Ed. There are now 14 teacher training institutions for preparing secondary school teachers; their annual output is 3,100.

The degree of Master's in Education (M. Ed.) is offered by the Institutes of Education and Research in the universities. There are two programmes for obtaining the M. Ed. degree; the first is a two-year course for students with a B. Ed. degree who enrol directly in the institute, and the second is a one-year course for teachers with the B. Ed. who have taught for a minimum of three years. The institutes also conduct courses for the M. Ed. degree in Industrial Arts Education, Business Education and Physical Education.

In 1970, the total number of primary school teachers was 95,000 including 21,000 women teachers. In the middle schools their total number was 31,500 including 8,500 women teachers. In upper secondary school the number of teachers in 1970 had reached 40,500 including 11,500 women teachers.

The Government in its Fourth Five-Year Plan (1970-1975) has given considerable attention to maintaining a balance between the supply and demand of teachers so that the recruitment of untrained teachers could be avoided. For this, the number of primary and secondary teacher education institutions is planned to be increased from 53 to 75 and from 14 to 18 respectively during the Plan.

Organization of programmes for further education

The Ministry of Education and Scientific Research in the Central Government is in charge of planning and policy-making of education in an advisory capacity. In the Central Bureau of Education established in the Ministry there is a unit for teacher education. The main function of the unit is to advise the Ministry on the policy, standards, curriculum and certification for teacher education, both pre-service and in-service, at all levels of schooling.

Education is a Provincial matter, and in-service training programmes are planned by the Provincial Governments: the Provincial Directorate of Education is in charge of planning, organizing and supervising the programmes for further education of teachers in service. The Divisional Inspectorate is directly responsible for carrying out the in-service programmes for teachers in the teacher training institutions in the Province; the Director of Education Extension Centres collaborates.

The Education Extension Centres and In-Service Training Centres for Primary Education are permanently established units of the Provincial Education Departments. The function of the Education Extension Centres is to improve the quality of Secondary Education through in-service training of teachers and by assisting in the training of specialized staff needed for the gradual conversion of a number of high schools into multiple schools. The In-Service Training Centres attend to the in-service training of primary school teachers. All courses of short and long duration are planned and organized by the Education Extension Centres, on the approval of the Director of Education.

At the local level, the district inspectorates are responsible for carrying out refresher courses, conferences, seminars and workshops for teachers in service in the public schools. Most of these programmes are held in the teacher education institutions situated in the Districts.

In order to co-ordinate the programmes organized for improving the academic and professional qualifications of

teachers in service with the national and provincial policies of education, co-operation is established between the offices of educational planning and teacher education at all levels of administration. This is quite evident in the provinces, where planning cells and teacher education units in the departments of education co-ordinate their plans and define the programmes required for improving the standards of teachers in accordance with the educational policy and the plans formulated for the development of education in each province.

In-service courses are conducted for both trained and 'untrained' teachers. In-service programmes are offered to the trained teachers by certain agencies, such as the Education Extension Centres, Training Colleges and Institutes of Education and Research, Boards of Intermediate and Secondary Education and In-Service Education Centres. Untrained teachers with the prescribed academic qualifications can also attend such In-Service courses and then proceed to take the teachers' professional examinations.

Programmes of further professional training/education are organized by the Education Department regularly through various training institutions. Programmes are generally set up for the purpose of modernizing the syllabus in Science and Mathematics and giving guidance to the teachers of lower and upper secondary schools.

If a new orientation is given to subjects in the curriculum, no new teachers are appointed, but if new subjects are introduced, new teachers of that subject are recruited. In-service courses are held in all the subjects taught in high schools: English, Mathematics, Science, Social Studies, Teaching of English, Urdu, Home Economics, Agriculture, Industrial Arts and Islamiat.

Each in-service programme lasts about 6 weeks, with one group following another so that the programme continues smoothly. The courses are usually conducted during summer vacation when the annual examinations are over. The modernization of curriculum courses is graduated generally in the subjects of Mathematics, Science and Guidance.

Pilot projects for testing new curriculum, methods and techniques in Science, Mathematics, Social Studies and languages, take place in selected schools.

Pilot Secondary Schools and Comprehensive High Schools, in which diversified courses like Agriculture, Industrial Arts, Commerce, Home Economics have been introduced, receive special assistance and guidance from the Education Extension Centre.

Types of in-service programmes

In Pakistan there are two distinctive types of programmes organized by the Departments of Education in each region for furthering the education of teachers in service. As the education administration is autonomous in each Province, such programmes may differ from one to another. The two most common types of in-service teacher education programmes carried out are: (1) those organized for raising the qualifications of teachers to higher teaching certificates, and (2) those organized for training teachers in the innovative techniques in teaching methods and orienting them to the modernization of the curriculum.

From 30 to 40 qualified trained teachers, particularly those teaching the subject for which training is given are deputed to attend. Their selection rests with the Divisional and District Inspectors of Schools, keeping in view the requirements of the Centre. A certificate upon completion of the course is awarded, but it does not guarantee promotion, or salary increments. No fee is charged, and eligibility to appear in the next higher examination is an additional attraction to some.

Generally, a Master's degree holder in education gets three advance increments initially. Higher salaries and grades are very often given to the teachers when they increase their professional qualifications.

Opportunities already exist for fellowship and travel abroad. Facilities also exist to participate in meetings and conferences of professional bodies in or outside the country.

The staff of the centres where in-service programmes are held are well qualified and experienced teachers, appointed by the Education Department. Resource persons who are invited from the various institutions have sound academic achievement in the subject in which the courses are being conducted, and they work in an honorary capacity.

In addition to in-service programmes for untrained teachers of primary and secondary schools conducted during vacations, the Institute of Education and Research which is part of the University of the Panjab offers opportunities for further education of teachers in service, in its M. Ed. and Doctoral programmes. The Institute of Education, University of Sind,also offers similar programmes at the M. Ed. level.

Regular classes of B. Ed. and M. Ed. are held in the Teacher Training College of Peshawar University. In addition, teachers of primary and secondary schools are called in groups for in-service training during vacations where the students of M. Ed. and M. A. in Education courses act as teaching assistants. A teacher with bachelor's degree in Education with one year service as teacher is admitted to M. Ed. and a teacher with first class M. Ed. to the Ph. D. programme. The student-teacher has to pay examination fees but no tuition.

In-service programmes for upgrading the qualifications of 'untrained' teachers

In Pakistan the term 'untrained teacher' means a teacher who practises the teaching profession in either a government or a private school without possessing the teaching certificate required to teach at the prescribed level of schooling. In case trained teachers are not available, untrained teachers are appointed in primary, middle and secondary (high) schools. At least one year of teaching experience as an untrained teacher qualifies one for selection for training. Untrained teachers are sent annually for training to institutions within the country. The position in 1970 in respect of untrained teachers is given on the following page.

Kind of school	Percentage of untrained teachers
Primary	7.4
Middle	2.9
Secondary (High)	7.3
Total (All schools)	6.5

An undergraduate untrained teacher having the matriculation or intermediate qualification and seven years' service can appear as a private candidate in professional training examinations (P.T.C. or T.C.) after completing two in-service courses of two months each. The short-term course is generally conducted during summer vacation only. The in-service courses for the untrained primary school teachers are organized in teacher training centres during summer vacations and in certain centres during the academic year. The in-service courses for middle-level teachers are organized in the normal schools during summer vacations by the divisional inspectorate.

There are two categories of programmes organized for improving the qualifications of teachers in service. The first category is the programme which is mainly set up for untrained teachers who had been recruited to schools because of the urgent demand for more teachers. The second category of the in-service programme is tailored to the trained teachers who possess teaching certificates and who are given the opportunity to improve their professional status. For the second category, the Department of Education organizes in-service programmes which are considered as pre-requisite for teachers before they attend final examination for higher certificate.

In primary education before 1968 the teaching certificates required to teach in this stage were the Junior Vernacular Certificate (8 years of formal schooling plus one year of teacher education) and the Senior Vernacular Certificate (10 years of formal schooling plus one year of teacher education). At present, emphasis is placed upon improving the qualification of teachers with the J.V. certificate. For teachers to acquire the S.V. certificate they have to obtain the matriculation certificate and have a minimum period of five years'

service. They can then attend a two-month training course held during summer vacations and apply for the final examination as private candidates. The summer in-service courses organized for those teachers are held in the normal schools. Participants are selected from primary schools on the recommendation of their principals and approval of the Department of Education. Selected staff members of the normal schools as well as resource persons from the Department of Education are assigned to teach these courses. The main elements of the courses are : general orientation to the primary school curriculum, basic knowledge in psychology and education, and methods of teaching subject matter. Upon successful completion of the course, the participant is granted a certificate which is considered as a basic requirement to allow him to sit for the final examination held every year for obtaining a higher teacher certificate.

For teachers in service in middle schools or in primary schools who desire to improve their qualifications to obtain the prescribed Teaching Certificate the department of education in each region organizes special summer training courses. Teachers with certificates in Junior Vernacular (J. V.), Senior Vernacular (S. V.), Oriental Subjects (O. S.), or Drawing, as well as Diplomas in Physical Education (D. P. E.) are required to obtain, as a first requirement, the matriculation and intermediate certificates. They must also have at least five years of approved service as teachers. Teachers in service who fulfil those requirements are eligible to attend a two-month course in one of the normal schools for middle school teachers during summer vacations. This programme includes courses such as educational psychology, school organization, methods of teaching, languages, general science, social studies, physical education and practical arts. Teachers in service who fulfil the requirements are given an attendance certificate which allows them to appear in the final examination for the Teaching Certificate as private candidates.

In upper secondary schools, all teachers are required to possess the degree of Bachelor of Education (B. Ed.). Those who were appointed without acquiring this degree are given

the opportunity to attend teacher training colleges. These colleges do not provide summer or evening courses to upgrade the qualifications of teachers who are holders of B. Sc. and B.A. : the degree of B. Ed. can only be obtained through regular attendance at the courses prescribed with the approval of the universities to which the colleges are affiliated.

Degrees in education are granted by the universities. Two of the universities have established Institutes of Education and Research and the others have set up attached wings for colleges of education in which post-graduate degree programmes are offered. In order to assist working teachers to obtain the M. Ed. degree while they are in service, a special programme is organized for three years in which they attend evening and summer courses. The M. Ed. degree is also obtained from the Institute of Education and Research at Lahore in Industrial Arts, Business Education and Physical Education. The Degree of Doctor of Philosophy can also be obtained from the Institute by holders of M. Ed. degree.

In-service programmes for updating knowledge

Considerable attention is given to keep teachers in service abreast of new policies in education, changes in the curriculum and contents of subject matter, modern concepts and approaches in teaching methods, and innovative techniques in classroom instruction. As each region is autonomous in its education administration, the procedures for organizing in-service programmes for further education of teachers vary. However, the common practice in all the regions is to organize conferences, workshops, seminars, study group meetings, refresher courses, on-the-spot training and field guidance for teachers in service round the year and especially during summer vacations. These programmes are carried out by the departments of education in collaboration with teacher education institutions.

The Education Extension Centres play a leading role in providing year-round programmes. The types of courses offered by these Centres deal with a wide scope of educational areas of improvement such as teaching of English, sciences,

mathematics, social studies, industrial arts, home economics, agriculture, commerce, Urdu, guidance and counselling, school librarianship and school administration and supervision.

Permanent Centres for Education Extension Service. In the Fourth Five-Year Plan 1970-1975, the programme of in-service education for improving the quality and professional competency of teachers will be expanded and strengthened and in particular the facilities of the Education Extension Centres will be increased.

In 1959 the Government of Pakistan, with the assistance of the Ford Foundation, established an Education Extension Centre at Lahore for the purpose of "developing, arranging and co-ordinating programmes of in-service education for teachers, headmasters, inspectors and other education officers". As this Centre showed notable results in improving the quality of teachers in service and administrators both academically and professionally in the Panjab region and those who participated in its programmes from other regions, the Government of Pakistan decided to establish similar centres in other regions. In 1964 three additional regional centres were established at Abbottabad, Khaipur Mir and Karachi. Through this network of Education Extension Centres it became possible to offer in-service training programmes for teachers in all the four provinces of Pakistan.

The principal function of the Education Extension Centres is to improve the quality of secondary education and help modernize the curriculum and methods of teaching through in-service education programmes for teachers and administrators. The Centres also assist the Regional Departments of Education in the training of specialized staff required for the gradual conversion of a number of high schools into multipurpose schools. More specifically, the Centre at Lahore performs the following functions:

1. To enable inspectors and other education officers to acquire a better understanding of present-day needs for education and greater skill in discharging their responsibilities for improving teaching and school administration;

2. To train headmasters and headmistresses in providing effective administration and helping teachers to improve their instruction;

3. To sponsor conferences of school administrators for the purpose of orienting them of changes taking place regarding educational policies, curricula and methods of teaching;

4. To increase the knowledge and teaching skills of experienced but inadequately trained teachers through intensive courses;

5. To assist professional groups and educational institutions to plan and carry out programmes of in-service education for their members;

6. To arrange instruction in appropriate institutions in methods of teaching vocational and technical subjects in secondary schools;

7. To work with selected trained teachers from secondary schools to introduce modern methods of high quality of instruction in mathematics, language, social studies and other aspects of general education;

8. To reinforce the programmes of teaching science, mathematics, industrial arts, agriculture, commerce and home economics in the secondary schools throughout the province by providing expert advisory services and by procuring and distributing teaching materials.[1]

The functions of the other three regional Education Centres are broadly similar. The programme activities carried out by the Centres include publication of books, pamphlets and journals which are disseminated to teachers in service and administrators to keep them abreast of modern new methods and techniques.

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1. The West Pakistan Education Extension Centre, monograph issued in 1970 by the Education Extension Centre at Lahore, Pakistan, p.1.

In-service programmes for updating knowledge

The Education Extension Centre at Lahore has extended recently its activities in in-service education programmes for primary teachers in the Panjab province in collaboration with the Department of Education. For this purpose, two centres of in-service training for primary school teachers were selected to modernize their programmes and introduce certain innovative techniques in methods of teaching and administration. Guidance to the staff of these Centres is given by the specialists of the Extension Education Centre. Starting from 1972, the Centre has also been organizing training programmes for leaders in primary education who are to be responsible for organizing programmes in the various districts of Panjab in order to improve the abilities of teachers in service in primary schools. The number of courses held through May of 1969 was as follows :

	Lahore Centre	Regional Centres	Summer Courses	Total
No. of courses	164	154	177	495
No. of participants	5 143	3 886	5 993	15 022

Modernization of curricula. Modernization of the existing public school curricula in Pakistan has received special attention in recent years, notably those for Physical Sciences and Mathematics at all stages of education. The strategy adopted by the Government was to introduce revised curricula in these subjects in the secondary stage in the first instance and then to extend the process to the primary stage.

Curriculum committees consisting of professional educationists and subject specialists have been set up in each province in order to evaluate the effectiveness of the existing curricula in physics, chemistry and mathematics and to formulate, develop and improve them in the light of the changing needs of the country. In preparing the modernized curricula, considerable attention was given to the new concepts of integrating science subjects, to creative thinking and to problem solving approaches. In addition, new textbooks, teacher's

guides and other instructional materials have been prepared and distributed to schools.

Retraining of teachers in service in the modernized science and mathematics curricula. Each province has formulated a programme through which all science teachers would be retrained in the contents of the syllabuses, in the new techniques of teaching and the visual aids materials prepared for this purpose. These retraining programmes were organized by the local Education Extension Centre in co-operation with the Department of Education, teacher training institutions and universities. The Panjab province is hereunder given as an example of the general system followed in organizing the retraining programmes. This province has 1,765 secondary schools with 2,000 teachers of science and 2,000 teachers of mathematics.

As a first step the Education Extension Centre in consultation with the Planning Cell and other divisions in the Education Department laid down the work plans. In 1968, the Centre organized conferences of ten days' duration for 238 teacher-trainers selected from lecturers of the Colleges of Education. The teacher-trainers were given orientation to their role as leaders in the training programme. They also participated in elaborating the detailed programme for retraining teachers in the content, methods of teaching and use of new teaching materials. After these conferences the teacher-trainers were dispersed to thirty-five centres established in different educational institutions in the province to carry out intensive training for a period of two months during summer vacation. A total of 3,475 teachers received in-service training. In the following years, the programme expanded to all the four regions.

In this nation-wide programme the Extension Education Centres played a key role. First, they assumed leadership in surveying the strengths and weaknesses of the syllabuses in these subject areas, in assessing their suitability to the country's needs and students' achievements and in defining the changes that needed to be introduced. Second, the Centres were actively involved in the preparation of the revised

curricula in co-operation with the universities and teacher education institutions, as well as subject specialists and supervisors in the departments of education. Third, the Centres devised a practical and successful system for organizing retraining programmes for a large number of teachers. Fourth, the Centres in association with the departments of education in the regions established a network of sub-centres in different education institutes to retrain the secondary school teachers during summer vacations. Fifth, the centres have been continuously involved in a systematic follow-up and feedback on the revised curriculum and in subsequent refinement and development.

Pilot schools for introducing new curricula and improving teaching techniques. Pilot schools in Pakistan are normally attached to teacher education institutions to serve as laboratories for introducing changes in the curriculum, testing new improved contents of subject matter, applying modern methods of teaching and experimenting with innovative techniques and materials in classroom instruction. Although these pilot schools are mostly used for providing laboratory experiences to student teachers there is now an increasing emphasis on making those schools centres for in-service training of teachers. It is the practice of many teacher education institutions to organize programmes, in co-operation with the surrounding schools, for their teachers to make regular visits to the pilot schools and to observe the new teaching methods, and to acquire experience in the preparation and production of visual aids. Conferences and workshops for teachers are also held by these schools.

A new scheme has recently been launched for establishing forty pilot secondary schools for talented students by offering better facilities and highly qualified staff and administrators at about the same per-capita cost as incurred in other secondary schools. These schools are intended to provide modern, broad-based and advanced education through diversified courses adjusted to urban and rural communities in which the schools are located. The main features of these pilot comprehensive schools are to introduce (a) diversified

education in commerce, agriculture, industrial arts, and home economics, (b) a guidance and counselling programme for advising students on their future occupational careers, (c) more innovative and effective methods and techniques in teaching theoretical and practical subjects, (d) changes in curricula, and (e) an expanded programme for science teaching.

By 1970, 23 pilot secondary schools had been established in the various regions in the country. The Education Extension Centres located in each province assist the Departments of Education in developing the schools, provide guidance in the improvement of the curriculum and methods of teaching, organize regular workshops and seminars for improving the professional competencies of the teachers and administrators, and evaluate the schools' performance.

Use of educational technology. For the purpose of promoting the use of educational technology in schools, special offices have been established for preparing and producing audio-visual aids materials in the Central Ministry of Education and Scientific Research at Islamabad and in the Departments of Education in the regions. For example, the Institute of Education and Research and the Education Extension Centre at Lahore have set up cells for training teachers, arranging film shows, and for carrying out research in the use of audio-visual aids in teaching. They also maintain films and filmstrip libraries which are made available to schools and teacher education institutions in their respective areas.

In order to promote the production and utilization of audio-visual aids in schools, this subject is given special attention at all levels of teacher education. Courses dealing with methods of teaching; e.g., sciences, mathematics, social studies and languages, include theoretical and practical training in the preparation and production of visual aids. In general, 25% of the content of such courses is devoted to familiarizing the student teachers with the theoretical aspects of educational technology and to improving their skills in preparing appropriate visual materials. Special short-term courses are organized for teachers in service at all levels of schooling in order to keep them abreast of new concepts and developments in educational technology.

Educational television programmes. Television was first established in Pakistan in 1964 with the setting up of a pilot station at Lahore. Other pilot stations were soon installed in other provinces. Although the existing programmes normally include general informal education features, the use of television as a medium for improving classroom instruction has yet to be fully explored.

In April 1971, the Central Ministry of Information and the Central Ministry of Education and Scientific Research initiated an experimental project in educational television in Lahore. The pilot project aims at telecasting instructional television programmes to supplement classroom teaching at the secondary level. The project in its experimental stage was scheduled to start the ETV programmes in 25 selected schools from the Lahore Secondary School Board Area with lessons in mathematics and science to be telecast during school hours.

As the pilot project for introducing the ETV programmes was carried out in the Lahore Secondary School Board Area, the Government of Panjab has established an educational television cell at the Education Extension Centre. The objective of this cell is to co-ordinate these programmes with the Central Educational Television Cell at Rawalpindi and with the ETV cell at the local television station at Lahore. The ETV cell at the Centre also provides assistance in suggesting topics for the programmes and in identifying teachers who would take part in carrying out the programmes. In addition, the Centre assists in providing training facilities in educational television for the teachers of schools selected for the pilot project.

School radio programmes. A school radio broadcast officer is attached to each radio station in Pakistan, and nearly all radio stations in Pakistan broadcast special programmes for schools. Each radio station in collaboration with teachers and administrators has set up advisory committees for planning, preparing and broadcasting educational programmes in the various school subjects. At present, most programmes are intended for secondary school students, and are broadcast for about one hour daily, covering from two to three subjects. Lessons are put on the air according to a fixed schedule : the

Audio-Visual Aids Centres publish regular school broadcast brochures giving the date, time and subject of each programme. These brochures are sent regularly to the schools in the regions, and they are advised to adjust their timetable to the broadcast schedules.

In order to help teachers to acquire the basic knowledge in the use of radio programmes for strengthening their classroom instruction, the Audio-Visual Aids Centres in the regions in collaboration with the Education Extension Centre conduct in-service programmes. This is in addition to on-the-spot guidance given by the inspectorate staff to the teachers during the broadcast time.

Programmed instruction. Programmed instruction as a means for improving the educational standards and strengthening the teaching-learning processes has recently attracted the attention of various professional bodies in Pakistan. Important research on the feasibility of introducing programmed instruction in teaching mathematics and sciences has already been carried out with encouraging results in the Institute of Education and Research at Lahore, the College of Education at Peshawar and a few other colleges of education attached to the universities. Programmed lessons have been experimentally adopted for use by teachers undergoing in-service training at the Education Extension Centre at Lahore. In addition, schemes have now been initiated, with the assistance of a few foreign agencies, to prepare trial programmed learning materials and train teachers in their use for a number of subjects starting with simple literacy materials and advancing to other areas of urgent need such as mathematics, science, technical and vocational education.

Innovative approach in disseminating educational technology to teachers in service in rural areas. The Government in its fourth Five-Year Plan (1970-1975) has allocated funds to launch an experimental programme aimed at introducing innovative concepts and practices for improving the teaching methods and techniques of instruction in the rural communities. In this experiment, the Government will provide a small number of mobile vans, manned by highly competent and

experienced teachers and equipped with a variety of audio-visual aids, equipment and materials, in order to tour schools in designated parts of each province. The mobile teams are expected to visit schools, hold meetings with teachers and administrators, and conduct demonstrations in the appropriate use of visual aids and instructional materials including those which can be locally produced. It is expected that this education extension technique in guiding and advising teachers in the field in a practical and pragmatic way will motivate teachers to adopt improved methods in teaching their respective subject matters.

Role of universities in further education. The Institutes of Education and Research, and the Colleges of Education attached to universities, are actively involved in organizing programmes in further education of teachers in service especially at the secondary school level in collaboration with the Departments of Education and Education Extension Centres in the provinces. Special emphasis is placed upon in-service programmes for teachers of sciences and guidance counsellors. These programmes are basically intended to help teachers get acquainted with the new concepts and trends in curriculum innovation and reform, and to keep them abreast of the new methods of teaching aids and supplementary instructional materials to increase the effectiveness of classroom instruction. The Institute has also been preparing and actively disseminating educational materials to teachers in service in order to update their knowledge and experience in innovations taking place in the techniques of guidance and counselling, and the teaching of sciences and mathematics, social studies, and languages.

The Department of Research at the Institute of Education and Research at Lahore, established in 1960, is also contributing in many ways to further education of teachers in service. The objective of the Department is to conduct research studies in the various branches of education, publish the result of such research and disseminate it to teacher education institutions and organizations. The department has completed a number of research projects including a study of basic vocabulary

which is being published in seven volumes containing alphabetical listing of all words, verbs and phrases in Urdu used by children in grades I through VIII. Other research projects are: standardized intelligence tests; a manpower study in education; and studies on supply and demand for teachers in primary and secondary schools, causes of dropouts in primary schools, feasibility of programmed instruction, and the use of television in teacher education.

PHILIPPINES

Background of the educational system

The present educational system consists of a six-year elementary (primary), four-year secondary and a four-to-eight year college or university education. A number of kindergarten schools are already in operation. Children enter the first grade at seven, and in some instances, at six years of age. Generally, boys and girls are almost equal in number in all levels.

The exponential growth in enrolment is typical of that of Asian countries. In 1947, there were 3,500,000 students enrolled in the schools; in 1960, the enrolment was 5,000,000 and in 1970 it was over 10,000,000. Of the 1970 enrolment, 7,200,000 were in elementary schools, 2,000,000 were in secondary schools, and 800,000 were in institutions of higher education.

The preparation of teachers was an early concern of the Government of the Philippines. The Manila Normal School for men and the Normal School for school mistresses were established in 1868, and the Philippine Normal School was established in Manila in 1901. Subsequently, a normal curriculum was introduced in selected secondary schools in the country. Regional normal schools were soon established to meet the growing need for trained teachers. Private educational institutions also started offering normal and education courses. At present the four-year teacher education course is a standard preparation for elementary and secondary school teachers.

With the growth in enrolment there is a corresponding increase in the number of teachers. In 1960, there were 117,600 teachers in the elementary schools and 23,800 secondary school teachers. In 1970, the number of teachers in

the elementary schools rose to 245,000 and in secondary schools to 55,700. In that year, the total number of teachers at all levels, both in public and private schools was more than 330,000. The teacher education programme in the Philippines has attracted a great number of students so there are still sufficient graduate teachers to meet the increasing demand.

Recruitment policy. The rules for the implementation of Philippine Republic Act R.A. 4670, otherwise known as the 'Magna Carta for Public School Teachers' prescribe the qualifications for the different levels of education in the public schools. These may be summarized as follows.

a) For Kindergarten (Pre-elementary School)

The minimum educational qualification is the degree of Bachelor of Science in Elementary Education, (B.S.E. Ed.), or one of the following equivalencies: (1) Bachelor of Science in Education (B.S. Ed.), major in elementary education; (2) B.S. Ed. (Inverted Course); (3) Bachelor of Arts (B.A.), major in elementary education; (4) Bachelor of Pedagogy; (5) B.S. Ed., with any major or minor, provided the applicant has successfully completed 18 units in 'professional' courses and five units in practice-teaching in the elementary grades.

b) For Elementary school teachers, grades I to VI

The minimum educational qualification is the degree of B.S.E. Ed. or one of the following equivalencies: (1) B.S. Ed., major in elementary education; (2) B.S. Ed. (Inverted Course); (3) B.A., major in elementary education; (4) Bachelor of Pedagogy; (5) Diploma for the four-year teacher-education curriculum in schools of Agriculture, Arts and Trades (major in Industrial Arts), and Fisheries; (6) Bachelor of Science in Home Economics (B.S.H.E.) (Elementary); (7) B.S. in Agriculture, Agricultural Homemaking, Foods and Nutrition, Home Economics (Secondary), Home Technology, together with successful completion of 18 units in practice teaching in the elementary grades.

c) For secondary school teachers (General)

The minimum educational qualification is a B.S. Ed. with a major or minor in secondary school subjects or a B.A.

with at least 18 units in education, 12 units of which should be in the following courses: Educational Psychology; Principles of Education; Principles and Techniques of Teaching; Measurement and Evaluation; and the remaining 6 units may be any two of the following 3-unit courses - Principles and Techniques of Guidance, History of Education, Principles of Secondary Education, Philippine Educational System, Educational Sociology, Philosophy of Education, Observation, Participation and Practice Teaching (5 units). The following are to be considered as equivalent to a B.S. Ed. : (1) B.S. in Home Economics; (2) B.S. in Library Science; (3) B.S. in Industrial Arts; (4) Bachelor of Physical Education; (5) B.S. in Agricultural Education; (6) B.S. in Industrial Education; (7) Any technical or professional degree with 18 units in education.

d) For Secondary Vocational Teachers (Vocational Education)

The minimum educational requirement is one of the following: (1) B.S. in Agriculture, Industrial Education, or Fishery; or (2) Diploma for technical course ($2\frac{1}{2}$ years) with a specialization, and at least eighteen (18) additional units of professional education subjects.

e) For University Level (General)

The minimum educational requirement for teachers at the higher education level, other than vocational, is a Master's degree with a specific area of specialization.

Republic Act 4670 prohibits the employment of 'untrained' teachers.[1] At present, all teachers in elementary schools have been trained under the pre-service and in-service education programme for teachers. At the second level, however, a few untrained teachers are appointed owing to non-availability of qualified teachers in the community. The policy is to replace these teachers as soon as there are available qualified applicants for the position. In vocational schools, roughly 20%

1. By untrained teachers is meant those who do not meet the minimum educational qualification set by R.A.4670.

are untrained. They are given provisional appointments until they meet the requirements including Civil Service eligibility.

Teachers in service who do not possess the minimum educational qualifications are encouraged to enrol in the teacher-education departments in private and public colleges and universities. For untrained teachers in elementary schools, scholarships are available to complete the B. S. E. Ed. degree required by law. Some separate programmes of further education are available to trained and untrained teachers with financial help. These include:

a) Bureau of Public Schools (BPS) Scholarships for graduate courses at Philippine Normal College (PNC) in Pilipino toward either a certificate in Teaching Pilipino as a second language, a certificate in Teaching Reading in Pilipino, or a Master of Arts in Teaching (M. A. T.);

b) BPS-PNC Scholarships for graduate courses in English toward a Master of Arts in Education majoring in Teaching English as a second language or a Certificate in Language Teaching or Reading;

c) BPS-PNC Scholarships for graduate courses in Linguistics;

d) BPS-PNC Scholarships for graduate courses in School Administration and Supervision leading to M. A. in Education;

e) BPS Scholarships at the University of the Philippines (UP) for graduate courses in School Administration and Supervision;

f) BPS-UP Scholarships for graduate courses in English leading to an M. A. T.;

g) BPS-UP Summer Institutes in the Social Sciences;

h) BPS Scholarships at Zamboanga State College for graduate courses toward an M. A. in Education and undergraduate courses in teacher-education (for untrained teachers) toward a B. S. E. Ed. degree;

i) BPS-UP Institutes in Physical Education;

j) BPS-UP Institutes in Music Education;

k) SEAMEO Grants in Teaching English, at the Regional English Language Centre (RELC);

l) SEAMEO Grants for Science and Mathematics teaching, at the Regional Centre for Education in Science and Mathematics (RECSAM).

There are specific salary rates corresponding to the educational qualification of new appointees. Salary increments within one or two ranges are given to teachers who acquire higher qualifications while in service. Accumulation of points as a result of successful attendance at seminars, work conferences, and institutes is also credited as basis for salary increments. For example, Teacher A, a holder of B.S.E.Ed. degree at the time of recruitment, is hired with a salary range of '38' at the rate of ₱ 3,792 per annum. When he or she completes at least 20 units of credit of the academic requirements for M.A. while in service, he gets a salary promotion to range '40' at the rate of ₱ 4,188 per annum. A teacher who completes the M.A. degree while in service gets a salary promotion to range '41' at ₱ 4,404 per annum. In all cases, the teachers should have a performance rating of at least 'satisfactory' for the last period of evaluation.

Those wishing to increase their salaries by virtue of additional qualifications are required to submit their request for salary adjustment under the Teachers' Preparation Pay Schedule listing the preparation levels with the corresponding salary ranges. Teachers are adjusted in their salary ranges according to additional formal academic training completed, length of service, and professional activities. Appropriate Civil Service eligibilities are also required for promotion in certain positions.

Organization of programmes for further education

As required by the Bureau of Public Schools, there are national, provincial and local in-service training programmes

at all levels of education in order to improve the professional outlook of teachers. The promotional divisions for elementary, secondary, and higher education are in charge of the in-service programmes for their respective levels.

For in-service training at the elementary education level, the In-Service Training and Pilot Schools Section, Elementary Education Division is in charge. The duties of the section are as follows:

1. To make surveys of in-service training needs;
2. To propose in-service projects to representatives from the field;
3. To sit with the Advisory Boards of the BPS Regional In-Service Centres in the finalization of plans for yearly in-service education programmes;
4. To co-ordinate consultant services of General Office personnel;
5. In co-operation with the Research and Evaluation Division, to evaluate the impact of in-service education programmes on the improvement of education;
6. To supervise follow-up activities of the national and regional in-service training programmes at the division and local levels.

Section 370 of the Revised Service Manual requires the Superintendent of Schools to plan for the improvement of secondary school teachers in service through in-service education programmes. A programme may be initiated either by an individual or by a group of specialists, supervisors and administrators in the General Office. This is submitted to the Director of Public Schools for approval. When approved, such training is conducted either at the national level or regional level, as may be considered practical, and attended by representatives from various divisions and cities. This usually starts the whole programme, as the same training is then conducted in the provinces and attended by the different representatives of schools. Again, another in-service is conducted within the school itself, usually handled by the chosen representative of that school in previous training.

Organization of programmes for further education

In the Bureau of Vocational Education (BVE), the three major divisions - Trade, Agriculture, and Fishery - may organize in-service education in their respective fields. The Teacher Education and Related Subjects Division of the same Bureau takes charge of the in-service education of related subjects teachers (academic), instructors, and heads of departments. The BVE organizes an in-service education programme at the local, regional and national level. As the Related Subjects teachers work on a 10-month basis, their summer vacations can be spent in attending summer classes, and every school has a programme for in-service education of teachers at the local level.

The national centres are located as follows:

Centre	Service area
Bayambang, Pangasinan	Luzon provinces including Mindoro, Marinduque, and Palawan
Cebu City	Eastern and Western Visayas
Zamboanga City	Mindanao and Sulu

The normal college in each centre provides consultant services and extends the use of its facilities to participants of in-service education programmes. In each centre a materials production centre has been established. This centre is utilized for the development of teaching aids and instructional materials to be distributed within the service area.

Under the Bureau of Public Schools, the regional in-service education centres have been established in 21 strategically located divisions throughout the country. Each centre is directed by the superintendent of schools for the division where the centre is located. He is assisted by the division staff, the district supervisor and the principal of the pilot elementary school. Each centre has an advisory board, members of which are the superintendents and academic supervisors of the member divisions.

The functions of each centre are:

1. To maintain a pilot elementary school where new techniques and procedures in teaching, administration, supervision and school-community articulation are demonstrated;
2. To organize regional conferences and extend the use of the centre's facilities to participants;
3. To stimulate school personnel in conducting action research and in preparing evaluative instruments and tests;
4. To develop evaluative criteria for appraising the outcomes of in-service education activities;
5. To prepare brief annual reports on worthwhile activities in the in-service education centre and distribute these reports to the divisions in the service area.

When new subjects are introduced in the curriculum, or a new orientation is given to them, the practice followed is, first, to organize in-service education programmes for teachers on the required competencies, and, second, to encourage teachers to grow professionally on their own. Long- and short-range programmes are organized one after another or simultaneously depending upon the goals set for each. At the national and regional levels, plans are made by the advisory boards of the centres in accordance with agreements between the General Office In-Service Education Committee and the field representatives. Local in-service education programmes are planned by local committees. All subject-areas are covered by the in-service programmes organized for teachers. Each region may choose the subject areas to be taken at each programme depending upon the needs of the service area.

There are pilot projects, usually organized in the regional and division pilot elementary and secondary schools, designed for introducing new curriculum methods and techniques in the schools. First the regional schools serve as try-out centres for new curriculum methods and techniques.

If these are found appropriate, they are implemented in the division pilot schools. Then the division pilot schools serve as demonstration centres for their respective divisions after which the new trends can be generally implemented. There are also pilot schools for the training of teachers and try-out of curriculum materials in population education, science, mathematics, and Pilipino.

The graduate courses at the Marikina School of Arts and Trades and the Philippine-France Pilot Project in the same school are pilot projects in vocational education. The graduate programme of the M.A.T. type offered during the summer term in the Marikina School of Arts and Trades, another pilot project, is a faculty development programme of the Bureau of Vocational Education. Each school is to send at least one teacher per year to undergo the graduate programme for one semester, with board and lodging and other school expenses - except tuition fees - to be borne by the teacher (who remains on salary). The teacher is encouraged to finish the programme on his own during the Summer term.

Types of in-service programmes

In-service education programmes take the following forms:

1. Demonstration teaching - Usually given by trained and skillful teachers to show observers how to do it, "to present sound and approved methods, techniques and devices."

2. Faculty meeting - A means to increase efficiency of teachers by acquainting them with school routine and discussing professional matters of current importance to the school.

3. Individual or group conference - To thresh out specific problems. It supplies valuable means of getting and giving individualized or group assistance.

4. Intervisitation - Provides opportunities to visit and observe other classes and, through comparison, helps the teachers to gain insights on new things.

5. Summer classes or institutes - To help broaden the professional outlook of teachers during summer sessions.

6. Workshops - Based upon principles of learning such as readiness, needs, and democratic processes. These stimulate members to new ventures in developing social traits and democratic procedures and techniques. Group members are expected to finish some tangible accomplishment.

7. Seminars - Usually availed of by using the talents or reasoning of scholars, authorities, and specialists in a particular subject matter.

8. Work-conference - Conducted by lecture, at the same time encouraging group work to finish tangible projects out of the subject matter discussed.

The Bureau of Public Schools in-service education programmes are held in the national and regional centres. The qualifications of participants are dependent on the subjects covered and the types of programmes organized. Generally, participants must have leadership and be in the best position to disseminate ideas gained. They are selected according to fixed criteria by national, regional and local committees; their number depends upon the facilities available as well as upon the needs of each participating unit. They attend the courses on official time, but have to pay a reasonable amount in fees to defray expenses. Certificates of attendance are given to successful participants, who gain credits toward promotion.

Other opportunities for further formal education open to teachers in service include the regular graduate courses in teacher education during the school summer holiday at the Baguio Vacation Normal School, Northern Luzon State Teachers College, Leyte Normal School, and Bukidnon Normal School, as well as any recognized college or university.

Study leave. A law provides that teachers with at least 7 years of experience may be granted a study leave of absence

for one year with 60% of their regular monthly salary paid to them. Moreover, the Philippine Public Schools Teachers' Association (PPSTA) nominates teachers who are qualified according to criteria stipulated in a BPS-PPSTA Memorandum of Agreement for grants of full-year scholarships. On these scholarships, the BPS awards full pay during the study leave.

There is normally provision for all teachers in service with less than 7 years of experience to be allowed a maximum leave of absence for one year without pay. This will enable them to study full-time for one academic year. They are also permitted to study after school hours, limiting their semestral load to 6 units of credit. Weekend classes are sometimes made available in institutions of learning to help the teachers pursue their higher studies. They are awarded salary increases after they have obtained the required number of units of credit toward a degree which will better their academic qualifications.

There is a radio broadcast designed to help elementary teachers improve their teaching of English as a second language. The series includes discussion and demonstration lessons in the use of new techniques in presenting English lessons. No radio programme is utilized by the Secondary Education Division at present.

There are organized efforts at encouraging teachers to read extensively and discuss or write on educational themes. One of the activities in the school and district in-service training programmes is the organization of study and reading groups based on their common educational and instructional problems and interests of the teachers. Being directly concerned with the problems themselves, their motivation to do intensive reading and do research is spontaneous. Developments and findings of these study groups are usually published in educational journals and magazines. Articles or books published are credited for purposes of promotion in rank. This encourages teachers to write on educational themes. [2] They

2. As has been learned elsewhere, this practice also carries with it the possibility that too much of the teacher's energy may go into writing, and not enough into teaching. This is sometimes referred-to as the 'Publish or perish' syndrome. - Editor.

are encouraged to publish the results of studies and action researches conducted by them in order to generate further interest and inquiry.

Evaluation is done by way of required reporting by the different divisions and cities on the progress of projects undertaken. Further evaluation is achieved by giving national examinations and other tests.

In-service education for upgrading qualifications

Teachers in service and other school officials can upgrade their qualifications through various programmes offered in colleges and universities and in the Baguio Vacation Normal School which is operated by the Bureau of Public Schools. Scholarships are also available for study abroad, notably under the Fulbright-Hays and East-West Centre programmes in the United States and under the Colombo Plan programme for advanced studies in Australia or in the United Kingdom.

Evening, weekend and summer classes in colleges and universities. Teachers in service and other school officials may enrol in regular courses leading to an academic degree in a college or university near their place of employment which have evening and/or Saturday classes. Attendance in summer classes is quite popular among teachers and other school officials. A regulation of the Department of Education limits the study load of teachers and other school officials to 9 units (9 semester hours) per semester for undergraduate courses and 6 units (6 semester hours) for graduate courses. The same study load applies to summer classes.

The Baguio Vacation Normal School. The present Baguio Vacation Normal School has a long and impressive history as an in-service education centre. In the summer of 1908 the Bureau of Education established the Baguio Vacation Assembly which was attended by more than 250 teachers, mostly principals and supervisors. The regular courses offered were : Shakespeare's plays, general anthropology and general ethnology, genetic psychology, present-day educational tendencies, government of the United States and

contemporary problems in government, and heredity. Since then regular summer courses have been offered for teachers and school officials. The size and scope of the Baguio Vacation Normal School is shown in the following tables:

Enrolment

Year	Graduates	Undergraduates	Total
1967	1 025	218	1 243
1968	968	88	1 056
1969	1 040	22	1 062
1970	1 687	35	1 722

Number of Courses Offered

Year	Graduates	Undergraduates	Total
1967	32	38	70
1968	39	18	57
1969	40	18	58
1970	42	27	79

Teachers and school officials attending the Baguio Vacation Normal School pay for tuition and other fees as well as their board and quarters from an honorarium equal to 75% of their basic monthly salaries. The vacation school runs for six weeks.

Special programmes at the University of the Philippines and the Philippine Normal College. The Bureau of Public Schools has an Agreement with the University of the Philippines wherein a co-operative programme to upgrade the qualifications of public school teachers and school officials has been organized. Under this agreement the Bureau of Public Schools sends to the University outstanding teachers and administrators with leadership potential to take courses leading to the M. Ed. and M. A. T. academic degrees in such areas as Physics, Chemistry, School Administration, Reading, Teaching English as a Second Language, Health Education, and Special

Education. These school officials receive their salaries during the period of scholarship, which is usually 12 months, as well as some allowances for books, travel and board. The University exempts these fellows from the payment of tuition fees. Recently, some school superintendents have been awarded two-year scholarships to pursue a programme at the University for the Ed. D. degree.

A similar agreement between the Bureau of Public Schools and the Philippine Normal College is in operation under terms similar to that with the University of the Philippines. The areas of specialization for the M.A. degree are School Administration, Pilipino, Teaching English as a Second Language, and the Teaching of the Blind.

Hundreds of teachers and school officials have upgraded their qualifications under these two special programmes. It is foreseen that these programmes will continue and be expanded.

Further education for updating knowledge

In some instances, government or private universities hold symposia, work-conferences and seminars jointly sponsored with the Bureau of Public Schools in order to give emphasis to a certain aspect or subject of education. This is usually designed to enhance the professional competencies of those who have key positions as instructors. Selection is restricted to those having regular employment in the service, standard qualifications, the recommendation of higher authorities and, also, special talents, aptitudes, and interests. Fees are charged, but only on a cost-plus basis, and attendance is high in spite of this.

The different organizations and associations of executives, supervisors, and administrators in the field of education such as the Association of School Superintendents, Academic Supervisors, the General Education Supervisors, the Principals also conduct in-service programmes frequently, as do the teachers' organizations.

SINGAPORE

General background

Educational development. From the time Singapore became an independent sovereign republic in 1965, efforts were made to evolve a unified national education system based on a parity of treatment for the four official languages, Malay, Chinese, Tamil and English. All schools now teach Malay as the national language and follow a common syllabus of studies and examinations.

Before the only Teacher Training College was opened in Singapore in 1950, primary and middle level teachers were trained in Malaya. The Training College began with a full-time two-year certificate course for primary teachers. In 1960 this was replaced by a part-time three-year course leading to a Certificate in Education. In 1966, the full-time two-year course was adopted again. From 1970 a separate full-time two-year course, for teachers of lower secondary grades, was instituted. Qualification required for admission to the course for Certificate in Education for primary school teaching was 10 years of schooling, while that for the Certificate for teaching lower secondary grades was 12 years of schooling. Graduate teachers of upper secondary classes could take a one-year Diploma in Education. This was offered first in Raffles College, Singapore and later in the University of Singapore, before the Teacher Training College itself began to offer it in 1969.

Recruitment policy. Educational qualifications required for teaching in Primary level I to VI are Division I or II in Government Secondary IV School Certificate; or Cambridge School Certificate of Education (English Medium) with credits in Chinese or Malay or English languages, Mathematics or a Science subject - or equivalent qualification - and Certificate in Education (General).

For teaching in Sections 1 and 2 (7th and 8th year), a candidate must have a Cambridge Higher School Certificate with a pass in General Paper and two Principal level passes or a pass in General Paper and one Principal level pass and two subsidiary level passes; or a Government Higher School Certificate with two Principal level passes or one Principal level pass and two subsidiary level passes; as well as a Certificate in Education (H.S.C.).

A first Degree of the University of Singapore or Nanyang University or equivalent qualifications and a Diploma in Education are the prescribed qualifications for teaching in Secondary 3 to Pre-University II (9th to 12th year).

In the primary schools (the first 6 years) about 10% of the teachers are untrained and, in the secondary schools, (the next 6 years) about 4% of the teachers are 'untrained.' These untrained teachers were appointed long before the establishment of the Teacher Training College in 1950; and most are holders of degrees of foreign universities who were recruited by the government before the introduction of the course for the Diploma in Education. There are also untrained relief teachers employed on a day-to-day basis. Since then modified and special courses are offered to all untrained teachers except the relief teachers. However, a 15-hour ad hoc course, Introduction to Teaching for Relief Teachers, was conducted on five successive Saturdays by the Teacher Training College, Singapore, during September-October 1970. The course was designed to give a few essentials of teaching to an untrained teacher in his work. Topics covered: (a) How do I prepare my lesson? (b) How do I present my lesson? (c) How do I evaluate children's work? (d) How do I maintain an orderly class? (e) How do I get children to learn?

The salary scales of the Education Service are divided into three groups - 1 group for secondary school graduates, 1 group for pass degree graduates and 1 group for honours degree and higher degree graduates. Each group is segmented into three levels: Education Officer level, Senior Education Officer level and Chief Education Officer level. Movement up the levels or across groups will depend upon higher qualification and service.

Organization of in-service programmes

Since 1963, in-service courses for teachers have been regularly held to improve the quality of teaching. To avoid duplication of work between the Teacher Training College and the Inspectorate, an In-Service Courses Committee has been set-up. Its approval is necessary for the implementation of all in-service courses proposed annually by the Heads of Departments, Teacher Training College, and the Subject Specialist Inspectors of the Ministry of Education. The Head of Extramural Studies, Teacher Training College, who is the secretary of the In-Service Courses Committee, is responsible for the organization of in-service courses proposed by the Heads of Departments of the Teacher Training College. It is his duty to compile a list of proposed in-service courses submitted by the Heads of Departments of the Teacher Training College and the Subject Specialist Inspectors of the Ministry of Education for consideration and approval at the meeting of the In-Service Courses Committee.

The present programmes of in-service education are of two types, one for teachers who have no training in pedagogy and the other for teachers who possess some sort of professional education.

Major attention in the country has so far been focussed on the training of 'untrained' teachers in service. Regulations made in 1959 relating to the Chinese-medium teachers and in 1961 relating to the Tamil-medium teachers required them to undergo training if they desired to continue in the teaching service. All untrained teachers recruited before were given opportunities to become qualified. They were placed in the trained teachers' scale after acquiring due qualifications. From 1963 to 1968, incremental benefits were given to teachers who successfully completed certain approved courses; i.e., a successful teacher was entitled to one increment on his current salary scale. By mid-1968, the incremental benefits scheme was stopped. In 1970, the bonus scheme was introduced whereby a teacher would be entitled to a bonus upon successful completion of an approved in-service course.

While the Teacher Training College is the main agency for running in-service courses, courses are also held on occasion at the University or the Ministry of Education.

Trained teachers have been called for re-training from time to time in the Teacher Training College at Singapore. These programmes are usually sponsored by the Ministry of Education and aim at showing new directions to teachers. Whenever a new orientation is given to subjects in the curriculum or new subjects are introduced, the practice is to organize in-service education for giving the required competencies to the teachers (e.g., new mathematics course for secondary schools). As these in-service courses are organized on an ad hoc basis, the subject-areas covered by the in-service programmes vary with the needs of the teaching service. No graduated programmes are conducted in any area successively. The subject-areas covered by in-service programmes for 1972 are cited as illustrative: (a) Arts and Crafts, (b) Audio-Visual Aids in Education, (c) Chinese Language, (d) English, (e) Educational Television (ETV), (f) Home Economics, (g) Mathematics, (h) Music, (i) Malay Language, (j) Physical Education, (k) Vocational Guidance, (l) Cadet Forces.

There are pilot projects organized in the State for the introduction of new curricula, methods and techniques in the schools. In the introduction of the revised primary curriculum, teams of inspectors of schools, subject specialists and teachers conduct workshops, seminars, and experimentation in pilot schools, e.g., in integration of subjects and programmed instruction techniques.

Types of in-service programmes

1. All in-service courses organized by the Teacher Training College are conducted on the College premises. The in-service courses organized by the Subject Specialist Inspectors are conducted at the Ministry of Education, the Teacher Training College, and the schools.

2. Participants of in-service courses must be qualified teachers. The selection of course participants is based on

the relevance of the subject matter to the applicant's teaching, his qualifications and interests, and the recommendation of his superior officers. The number of participants admitted to a course depends on the responses and the facilities available. For Audio-Visual Aids in Education courses the number is limited to 15 per class, but for other courses there are as many as 40 participants per class. Lecturers are either degree holders or specialists in their own fields. They are drawn from the relevant departments in the Teacher Training College and the Inspectorate.

3. Participants who complete an in-service course are given a certificate, which may be taken into consideration when participants apply for promotion. No fees are collected. Attendance at in-service courses is treated as part of normal workload.

The School of Education of the University of Singapore conducts programmes leading to the Master's degree in Education. The Extramural Studies Department of the University of Singapore from time to time offers courses relevant to education. Teachers in service are eligible to take these courses.

Teachers in service can enrol for correspondence courses of foreign universities particularly of the United Kingdom. This opportunity for further education is availed-of by many.

Apart from the Inspectorate of the Ministry of Education, the Adult Education Board and the Teachers' Unions are two of the organizations engaged in activities for further education of teachers in service. They are organized and conducted in the same way as the in-service courses of the Teacher Training College.

Radio and Television programmes are not so far utilized specifically for the further education of teachers.

The Teacher Training College has a research unit which engages in various studies which are then published. The Ministry of Education produces a professional publication called the "Pendidek" three times a year. The writers who contribute to the "Pendidek" are teachers and educational

administrators and research workers. The magazine is widely read by teachers.

Higher salaries on the basis of higher qualifications than those prescribed at the time of recruitment are given to teachers recruited to a specific grade. If teachers acquire higher qualifications while in service, this too may help them to earn higher salaries.

In-service courses for upgrading qualifications

The earlier programmes for in-service education of teachers were part-time, but organized almost on the same pattern as the pre-service education programmes. There was a difference in the methods of teaching, however, because the trainees came with a teaching background. The intention was to instruct the untrained teachers in methodology and content knowledge of the various subjects by giving them initial training. These programmes served to clear the backlog of untrained teachers and have now been abolished.

In-service education for updating knowledge

To promote professional growth and to keep teachers abreast of the latest developments in education, short-term courses are organized by the Teacher Training College and the School Inspectorate. The duration of these courses ranges from 30 hours to 360 hours. The 30-hour courses for both primary and secondary teachers are held terminally, 60 hours and 90 hours yearly; the 360-hour courses are held biennially. All expenses for attending these courses are met by the Ministry of Education. Participants must be qualified teachers and be teaching the subjects relevant to the course. When there are more applicants than places, those with longer service, other things being equal, are selected. Besides the staff of the Teacher Training College and the Inspectorate, university teachers are requested to work as resource persons.

In-service education programmes for teachers in Singapore have made some significant contributions as reported below:

1. Producing sufficient teachers to man new craftwork and technical subject classes;
2. Producing sufficient teachers to teach English as a second language in non-English medium schools;
3. Producing regularly refreshed, better-informed and more-committed teachers.

Courses conducted for qualified teachers are mainly on the latest trends in theory, methods and administration, as well as in content areas. They are designed to impart new competencies to the teachers and bring up to date and improve the quality of their work. They take the form of lectures, discussion sessions, workshops, seminars or conferences.

A beginning has been made in training teachers in the mass media, especially in Educational Television through a Closed Circuit TV. The ETV Service of the Ministry of Education collaborates with the Teacher Training College on Closed Circuit TV in giving Utilization Courses for teachers. These are videotaped complete courses in five subject areas: methods of teaching Science, Mathematics, Second Language, Civics and Government. The course is approached as a workshop group. A telecourse for teachers is given with a group of lecturers in a team working as the instructional group. A preview of the programmes, followed by critiques and feedback is made. Senior teachers recommended by the Inspectorate and by Headmasters of Teacher Training Colleges are nominated to participate in the broadcasts.

A certificate of attendance is given to each teacher who attends the prescribed number of hours. No allowances of any sort are given but, for some courses, incremental credits have been given to successful candidates, who sit for an examination at the end of the course. There are special courses for school principals and specialist teachers. The programme of in-service courses offered by the Ministry of Education (Teacher Training College and Inspectorate) for the January term of 1972 is given beginning on the next page.

Arts and Crafts	Hours
1. Arts and Crafts for Teachers in Secondary Schools (Chinese) (4th Course)	90
2. Ceramic Art (Secondary) (Chinese)	90
3. Creative Drawing and Painting (Secondary) (English) (2nd Course)	90
4. Graphic Design (Secondary) (English) (2nd Course)	90
Audio-Visual Aids in Education	
5. Programme Planning Workshop (Primary and Secondary) (7th Course) (English)	30
6. Projection Workshop (Primary and Secondary) (6th Course) (English)	30
7. Duplicating Techniques in the Production of Audio-Visual Materials (Primary and Secondary) (4th Course) (English)	36
8. Production of Projectable and Non-Projectable Photographic Materials as Teaching Aids (Primary and Secondary) (2nd Course) (English)	60
Chinese Language	
9. Teaching of Chinese Language and Literature in Chinese Secondary Schools (4th Course)	90
10. Teaching of Chinese in Chinese Primary Schools	22
English	
11. Learning the English Language (English) (Primary)	14
12. Teaching of Library Skills in the Primary School (English)	15
Educational Television (broadcast on ETV)	
13. Media Approach to Education (Administration) (Primary) (English)	15
14. Television Teachers' Course (English)	30

	Home Economics	Hours
15.	Home-Making Course (English/Chinese/Malay)	30
16.	Graphics Course for Home Teachers (English/Chinese/Malay)	40
	Mathematics	
17.	Mathematics for Primary School Teachers (8th Course) (English)	30
18.	Mathematics for Secondary School Mathematics Teachers (11th Course) (English)	30
19.	Further Mathematics for Secondary School Mathematics Teachers (3rd Course) (English)	60
	Music	
20.	Brass and Woodwind Course (English)	40
21.	Keyboard/Organ Music Course (English)	80
22.	Chinese Instrumental Course (English) (Primary and Secondary)	20
23.	Music Appreciation Course (Chinese) (Secondary)	16
24.	Classical Guitar Course (English) (Primary)	60
	Physical Education	
25.	Badminton Coaching and Officiating (English) Primary (4th Course)	60
26.	Practice and Tests in Fitness Training (English) (Primary and Secondary) (7th Course)	30
27.	Soccer Coaching Course (English) (Primary and Secondary) (7th Course)	60
28.	Physical Education - Teaching of Skills - Men and Women Teachers (Chinese) (Primary)	30
29.	Movement Gymnastics for Girls (Secondary) (English)	60
30.	Soccer Coaching Course (Advanced) (English)	50
31.	Swimming Officials' Course (English)	10
32.	Swimming Teachers' Life Saving Course (English)	20

Physical Education (cont'd)	Hours
33. Bronze Medallion Course (English)	40
34. Dance Coaching Course (English)	300
35. Referees' Refresher Course (English)	14
36. Lawn Tennis Coaching Course (English)	20

In the May 1972 term, courses were offered in most of the above subject areas, and there was one course offered in Vocational Guidance.

SRI LANKA

General background

Educational development. In 1971, Ceylon, which has been now renamed Sri Lanka, had a school system with the following ladder:

Primary - - - - - Grades I to V
Secondary - - - - Grades VI to X
Senior secondary - Grades XI to XII

The medium-term plan for the development of education proposed in 1972 includes, inter alia, re-structuring of the school system, and it is now as follows:

Primary grades - - - - I to V
Junior secondary grades - VI to IX
Senior secondary grades - X to XI

The age of entry has been raised from 5+ to 6+ years.

At the end of grade X, children sit for General Certificate of Education (G.C.E.) Examination, Ordinary level; the G.C.E. Examination, Advanced level, is now given at the end of grade XI, instead of grade XII.

For teacher education, in 1972 there were 30 primary teacher training institutions operated by the government. 25 of them are non-specialist (junior) teachers' colleges training teachers of general subjects and five are specialist (secondary) teachers' colleges turning out teachers of English, Mathematics, Science, Commerce, Handicrafts, Physical Education, Home Science, Special Education and Agriculture. The duration of both training courses is two years after G.C.E. 'O' level. Some additional credits or 'A' level

passes in selected subjects are required for admission to both types of training institutions. Three universities provide teacher education courses of four years' duration leading to a Bachelor of Education Degree (B. Ed.) to candidates with G.C.E. 'A' level pass, while two provide a one-year course for university graduates leading to a Diploma in Education.

Recruitment of teachers. Teachers in primary schools have G.C.E. 'O' level or 'A' level as academic qualifications and either primary teacher training or specialist training. Those in secondary schools should be 'O' level or 'A' level graduates and secondary or specialist teacher training.

Untrained teachers may be appointed in primary schools for some specific subjects:

1. Science - G.C.E. 'O' level and university graduates
2. Mathematics - - do -
3. Art, Dancing and Music - Diploma of the College of Fine Arts
4. Handicrafts and Home Science - G.C.E. and Diploma
5. English - G.C.E. 'O' level or 'A' level

Graduates of universities, without training, are appointed in secondary schools to teach all subjects.

Statistics for 1969 showed that approximately 49.2% of the total teaching staff have qualifications up to high school with no training qualifications; 34.4% are trained high school graduates; 6.3% are university graduates without training; 1.1% are university graduates with training and 9% are subject teachers with various categories of qualifications. The number of teachers, according to a survey conducted in 1971, was approximately 82,000, of whom approximately 50% were without professional institutional training.

The junior (non-specialist) training institutions were geared to produce teachers mainly competent to handle children in all subjects in grades I to V. In the reorganization it was decided that all teachers under training, irrespective of whether the institution is specialist or non-specialist, are to

be paid the same salary on successful completion of their courses. The Junior Teacher Training courses were hence adjusted to provide for an additional course of training in one subject (of the student's choice) to enable every teacher to acquire the competency to teach one subject at the Junior Secondary level as well.

Organization of in-service programmes

Education receives high priority in Sri Lanka, and this is reflected in the high proportion of public expenditure set aside for education - approximately 19 % of the total government expenditure. A reasonable percentage of the expenditure in education is set apart for quality improvement of instruction in primary, secondary and technical education programmes. One of the activities within this is in-service education of school teachers, both trained and untrained. The other major activities are curriculum development and improvement of school practices.

Under the Ministry of Education, one division is in charge of teacher education. The Director of Education (Teacher Education) guides and controls the academic and administrative work of Teachers' Colleges.

When a new orientation is given to subjects of the curriculum or new subjects are introduced in the curriculum, it is common to organize in-service education for orienting teachers to the new requirements. When necessary, new teachers are appointed. The orientation seminars are organized for almost all subjects, usually by the Curriculum Development Centre under the Ministry. There is a proposal to establish a permanent centre for in-service education at Kandy immediately, in the Polytechnic building which will be taken over for the purpose. Another centre may also be established soon after this, probably at Kattupette.

For the present, the Curriculum Development Centre also functions as an Extension Centre for the further education of teachers in service. The responsibility for in-service education is shouldered mainly by the officials of the Centre

and of the Ministry in the regional centres. Regional Directors or officers under them generally must have the permission of the Ministry before organizing in-service seminars for teachers. The rationale of this is the desire for uniformity of practices regarding what to teach and how to teach. Teachers' colleges are not normally selected as centres for in-service education of teachers, nor are teachers' college personnel very much involved in it.

The pilot projects in existence are concerned with the teaching of science and new mathematics, and of pre-vocational education.

Types of in-service programmes

In-service training programmes are the only training programmes available for primary school teachers even for initial training. The Primary Teacher Training Colleges admit only those who have been in service for at least three months.

Further education programmes designed for orientation do not differentiate between 'trained' and 'untrained' teachers, but trained teachers are taken for programmes of training leading to supervisory positions.

Refresher courses and orientation programmes for different categories of teachers are organized by the Ministry of Education and other agencies such as teachers' associations and bilateral organizations (e.g., British Council). These courses are organized during the vacation and weekends, in the evenings and sometimes during working days. Emphasis so far has been on providing special courses for different curricular areas such as for teachers of agriculture, English teachers, teachers for religion, teachers of music and dancing, teachers of health and physical education and teachers of vocational guidance in both primary and secondary schools.

A Curriculum Development Centre is one of the major agencies organizing further education programmes for teachers in service. These fall into four categories: study circles,

vacation courses, conferences and committee work, and radio programmes. Besides co-operating in these programmes, the Regional Directors of Education also organize some programmes in their respective regions. They aim at improving teachers' knowledge and methodology, and at familiarizing them with the current trends. All the finances incurred by any government agency in this connection are met by central government allocations. Training institutions also organize in-service courses for teachers during school holidays.

Teachers in Sri Lanka, especially in secondary schools, are involved in the preparation of evaluation materials and curriculum guides and in the modification and interpretation of syllabuses and schemes of instruction. They are also encouraged to conduct projects on an experimental basis.

Guidance visits by staff of the Curriculum Development Centre to selected secondary schools is another way to promote professional growth of teachers. By discussing their difficulties and problems with the educational experts and through encouragement to them in their new experiments, they develop confidence in their work.

Secondary school teachers are encouraged to undertake research studies. Those who come forward are provided with the facilities, occasional advice and guidance, partial materials assistance and duplicating service. Major research studies undertaken include:

1. Improvement of Evaluation Practices in Mathematics
2. Teaching of Ecology
3. Use of Projects in the Teaching of Science
4. Hydro-Biological Survey of a Region of Sri Lanka

A postal training (correspondence course) has just been started for all those over 40 years of age and who have not been admitted to the training colleges. This will be a three-year course geared to the same attainment levels as the Junior Teacher Training courses.

External degree examinations conducted by London University are open to those who wish to qualify for degrees in higher education.

In-service education programmes are organized and conducted in Teachers' Colleges for the initial training of untrained teachers. Applications are called for and selection made from among those who apply. On completion of the course those who qualify receive teaching certificates. All education is free, and so no fees have to be paid. Salary increments follow training. The course is conducted by the teaching staff of the teachers' colleges only.

Diploma courses are organized for graduate teachers by the Department of Education. These courses are conducted by the universities. Selection is limited to teachers who have a university degree and a teaching service of five years. The Diploma in Education entitles a teacher to get the salary grade of trained graduate teachers.

Incentives for the further education of teachers

1. Higher salaries are given at the time of recruitment to those who have higher qualifications than those prescribed.
2. Teachers get increments in salaries when they acquire higher qualifications while in service.
3. There are special salary grades and posts to which teachers are promoted or selected on the basis of higher qualifications acquired while in service.

Radio. Radio programmes for the further education of teachers are broadcast in teaching of English as a second language, teaching of science, and teaching of Sinhala.

In-service teacher training programmes for upgrading qualifications

In a sense, all primary teacher training institutions in Sri Lanka are involved in in-service training only, as no trainees, or 'freshers', are admitted. At least three months of service after appointment to a school is required to qualify for selection to a primary teacher training institution. Leave with full pay and service benefits are given during the training period to all. An increase in salary is given after training.

In-service programmes for upgrading qualifications

There are three categories of teachers in primary grades - trained, 'certificated' and 'uncertificated'. The last category is made up largely of teachers of English and science. A certificated teacher is one who has passed written examinations in Principles of Teaching, Psychology, Methods of Teaching and certain academic subjects,and taken a practical test in teaching conducted by a Board of Examiners appointed for the purpose. No one is admitted for training who is above 40 years of age. The trained teachers are those who have had two years of institutional training in the primary teacher training institutions.

Candidates with G.C.E. 'O' level qualifications or equivalent are recruited through competitive examinations and receive appointment as teachers for a period of four years, during which time they should either obtain a Teachers' Certificate by passing the appropriate examination or gain entrance to a training institution. The competitive examination held annually for selection of trainees has now been replaced with an interview.

In one or two non-specialist teachers' colleges for primary teacher training, a one-year course is conducted for the teachers who possess the Teachers' Certificate, to become trained teachers.

Teachers who have 'passed' three or four subjects in the G.C.E. 'A' level examination and have a completed service of five years as trained teachers (having undergone two years' training in a specialist or non-specialist primary teacher training institution) and qualified for university admission by 'passing' an entrance examination are qualified to apply for study leave for upgrading their qualifications through university studies for a period of two years. In practice, however, this has not been very encouraging to many, as university studies for a degree of Bachelor of Arts or Bachelor of Education require a much longer period than two years.

Graduates of universities who have five years of teaching experience are eligible for study leave to join universities

for higher studies in Education. A one-year post-graduate course for teachers leads to a Diploma in Education and a two-year course leads to the Degree of M.A. in Education.

Further education of teachers in service for updating knowledge

General pattern. The following, in general, is the pattern of in-service programmes for the further education of teachers in service.

1. Study circles organized systematically during weekends in many regional centres have adopted an innovative approach to the further education of teachers in service, particularly in science and mathematics. About 70 teachers may attend at each centre at a time; and about 70% of the teachers in the State are thus covered in a year. They attend lectures and demonstrations, do practical work, and discuss among themselves the problems raised. The resource persons are selected mainly from the Curriculum Development Centre. Others are drawn from among Circuit Education Officers, Chief Education Officers and District Inspectors. A few principals of training colleges and lecturers, and sometimes outstanding school teachers, also are selected to conduct the study circles.

The selection of the content for the study circle is based on the performance of the pupils at the GCE 'O' level examination held in the preceding year. Areas in which the pupils did not perform well are identified by scoring a random sample of answer papers by a selected group of teachers for the purpose. It is presumed that poor performance of pupils in the areas identified was the result of the teachers' either not having comprehended the subject area properly or lacking knowledge of the proper means of communicating the ideas. Once the area is identified, it is intimated to the team of resource persons, and one or two of them will come forward with plans and proposals for dealing with it, to be discussed at a meeting. This meeting is for two days, during which they decide upon the proposals, do the needed laboratory work, and thus prepare to conduct the course.

The programme for the study circle is then communicated to the science supervisor of the area (each area has one) and he invites the teachers for the study circle, at the times fixed. The candidates come prepared with notes of lessons, supplies and aids, and discussions may go on from 8:00 a.m. to 5:00 p.m. for the two days. They may do experiments, or carry on workshop practice, along with discussions, if required for clarifying ideas or acquiring needed skills. All apparatus for science or mathematics teaching would have been taken to the centre by the resource persons in the vans in which they move from one circle to another, as teams.

No subsistance or travel allowance is given to teachers attending the study circles, nor have they been given any certificates. It is now proposed that certificates should be given to those who put in 18 hours of attendance. The certificates would be in the form of 'credit cards' which may be presented by the candidates for consideration at the time of promotions.

The above programme in science and mathematics is for teachers of grades IX and X preparing pupils for the G.C.E. 'O' level. A similar programme of study circles is going on for the G.C.E. 'A' level science teachers also, who teach grades XI and XII. For the teachers of science and mathematics in grades VI, VII and VIII, too, study circles are organized, but these are executed by 'master teachers'; i.e., the specialist-trained or graduate teachers in schools who are selected for this work on the basis of high performance. Their programme is planned by the Curriculum Development Centre and explained in detail to them in a session before they organize study circles, each in his region. The topics for this study circle are not identified by scoring examination papers, but are selected from the schemes and course guides, based solely on the opinions of inspecting officers (the basis of their opinions being what they have observed during school visits). Facilities provided are exactly the same as in the other two cases. Certificates are issued for most of the subjects - history, geography, English, arts and crafts, but not for science.

2. Vacation Institutes of from 7 to 14 days are conducted during school holidays. They are residential; board and lodging are provided free, as is rail transportation. Selection is made by the Curriculum Development Centre from among the teachers who have filed the prescribed application forms. Between 100 and 150 teachers are admitted to a centre. Normally only one centre operates for each subject in a vacation period, and only two such courses will be held in a year, one in April and another in August. Both trained and untrained teachers are selected from grades VI, VII and VIII. The courses for G.C.E. 'A' level teachers will therefore be mostly on teaching methods; they are encouraged to plan their own projects and adopt new approaches, while the 'O' level sessions may include subject matter discussions. Vacation courses are also held for the primary school teachers but these are not systematically done or well organized.

The main activities of the Vacation Institute are presentations, demonstration lessons, workshops and evaluation sessions. Each demonstration is followed by a series of parallel discussion groups. This affords teacher participants an opportunity to make a critical assessment of the demonstration lessons. Staff members, drawn from the Curriculum Development Centre and from among lecturers of teacher training colleges, participate in the workshop and evaluation sessions, and may also make presentations.

3. Conferences and committee meetings of teachers, convened for work in the Curriculum Development Centre, offer occasions for discussion and review of subject matter and teaching methods, syllabuses and courses of studies, and hence help their professional growth. This type of work leads to independent study by teachers.

4. Radio programmes are prepared on important topics (selected on the basis of reports that teaching on these topics needs improvement in the schools) in all subject areas and directed to the teachers. For the sciences, 8 programmes per subject per term are scheduled. Selected teachers, along with the personnel of the Curriculum Development Centre,

write the programmes, working as teams. Each is a 30-minute programme, broadcast in the evenings. No study has so far been made regarding the number of teachers who listen to these programmes; in fact, listener's questions are so few that a poor listening ratio is indicated.

Technical education. There are 10 institutions, including two senior technical institutes, which admit high school graduates. There are also polytechnic and junior technical schools which admit those with lower qualifications. These usually have about 25 teachers, some with the teacher training diploma and some with university degrees. In-service courses in general education and special methods (e.g., craft teaching) for instructors in technical education are conducted in the institutes. Teachers who participate are given free board and lodging (Rs. 5 per day) and travel warrants. Evaluation and follow-up are done for improvement.

There are over 1,000 commerce teachers, of whom more than 600 have full two-year training for teaching from Palali and Maharagama teacher training colleges. Refresher training courses are held every year for a period of 7 days each, and certificates are awarded to those who complete the courses. The training given does not lead to higher emoluments, but may be considered for promotions.

In-service education for the introduction of pre-vocational subjects in the curriculum. The study of technical and practical subjects is now being stressed. For the teaching of woodwork and metal work, weaving and ceramics, workshops have been provided in the Maharagama Teachers College. To encourage the study of practical subjects, a modular approach for the introduction of pre-vocational subjects in the school curriculum was adopted. A module has been defined as a unit in learning designed around a coherent block of activities concerning concepts extracted from an occupational situation. The support of parents and teachers was secured before the scheme was implemented.

As a step in this direction, the study of practical subjects such as wood work, metal work, handicrafts, home-science, ceramics, weaving and agriculture is introduced

as an optional programme at the beginning, leaving teachers to voluntarily participate in it. About 15 schools were selected as pilot schools, the basis being that their principals and staff showed interest and enthusiasm. Each of these schools prepared at least one module a week, tried it out with pupils and then reported to the Ministry and other pilot schools. Conferences with principals of pilot schools were held in the Ministry at the end of three months to review progress and revise and expand the programme.

A second phase of three months was devoted to involving about 50 pilot schools to work on the revised programme. The Ministry organized monthly conferences for sharing views among the workers. Teacher guides for preparation of modules for the first grade in which the work was done (grade VI) were prepared and disseminated to all schools.

In the third phase, the programme was reviewed, evaluated and improved by the Ministry as well as officers at the Regional, Circuit and District levels. It was then made compulsory for all schools in grades VI and VII, and kept optional for VIII and IX. After a period of two years of trial in grades VIII and IX, it may be made compulsory there also.

Simultaneously, the courses were introduced in all primary teacher training colleges and in the Diploma course in Teaching for university graduates. In-service training was given to teachers already in service.

Second-level quality improvement programme. In-service education of second level (secondary school) teachers takes the following forms:

1. Communication from design staff at the Curriculum Development Centre selected teachers, through: (a) curriculum specifications sent (scheme of work, pupil texts based on them, evaluation instruments); (b) residential in-service sessions of 13 to 14 days' duration; (c) non-residential in-service sessions of 3 to 6 hours' duration; (d) supplementary notes and other written instructions.

2. Communication from selected teachers to teachers in school, through: (a) residential in-service sessions of 3 to

14 days' duration; (b) non-residential in-service sessions of 3 to 6 hours' duration.

3. Communication from Design staff in the Curriculum Development Centre directly to teachers in school, through: (a) curriculum specifications; (b) radio talks; (c) residential in-service sessions of about 3 to 10 days' duration, generally over a year; (d) non-residential in-service sessions of 3 to 6 hours' duration; (e) supplementary notes and other written instructions.

In-service programmes in science teaching. Two Extension Centres are proposed to be established immediately, and programmes prepared for in-service education for teachers of science. Most science teachers in grades VI, VII and VIII have had no further education in science except the two or three courses taken for their G.C.E. 'O' level examination. Teachers of grades IX and X are secondary trained teachers (two-year course after G.C.E. 'O' level). Some have studied science at 'A' level also. They have a fair knowledge of Chemistry, Physics and Biology. The majority of teachers of grades XI and XII are university graduates in science subjects.

It follows that in-service education of science teachers in grades VI, VII and VIII will involve teaching subject matter and methodology as well as classroom practice, laboratory skills and improvisation of apparatus. It is proposed to do this by appointing a staff recruited as 'Master Teachers' from the best teachers in the schools themselves. Each Master Teacher would handle 20 participants. (Teachers in grades IX and X may have to be given specialized work in content areas of Chemistry, Physics and Biology - and laboratory skills: laboratory work will become an essential component of their programme). Groups of 20 teachers for each laboratory can be taken at a time in a Centre. The Master Teachers are to be trained at the beginning of each term by a unit, supervised by staff Circuit Education Officers. In a year, there will thus be three sessions for Master Teachers and 30 sessions for the participants.

Vacation time in-service courses conducted in the Centre will be in units of 7-day sessions attended by 30

teachers of grades VI, VII and VIII. The Master Teachers would be given training for teaching in a three-day session previously. Teachers of grades IX and X would attend 'O' level science courses. In-service institutes are to be held twice a year (April and December) with groups of 20 attending one institute in Chemistry and another in Physics. For those teaching grades XI and XII, one institute will be conducted by the staff of the Centre with resource persons from universities for a period of from 10 to 14 days. The participants of these Institutes (teachers of grades IX to XII) would earn credit-hours leading to an Institute Certificate for the courses followed.

Week-day or weekend seminars, discussion groups, and workshops may also be held in the Centre or in the schools for specific purposes.

Programme of in-service education for mathematics teachers. From 1966, two programmes of in-service training were organized for mathematics teachers: (1) A centre with one or more Master Teachers provides in-service training to a definite group of teachers of grades VI to X; (2) The Curriculum Revision Committee for Mathematics till 1970, and thereafter the Maharagama and Palaly Teacher Training Institutions gave in-service training to Master Teachers who in turn train the teachers of the region.

At the beginning of each school term the Regional Director of Education would organize meetings of Mathematics Master Teachers and plan all study circles for the term. The Master Teachers were to operate on the fees payable to them and were not eligible for further payments. The Curriculum Development Unit of the Ministry of Education was in charge of the overall programme.

Mathematics programmes proposed to be conducted at the Extension Centres are oriented to new methods of teaching. One-week sessions are planned. Up to 10% of the mathematics teachers would participate in in-service sessions conducted at the Extension Centres during any

school week (five-day sessions). For 50 teachers of grades VI, VII and VIII there are to be two supervisors. Each teacher will attend two sessions a year, as the unit will be repeated 10 times per term for three terms a year. Teachers of grades VIII and IX are to attend five-day sessions in groups of 30, three times a year.

One hundred and fifty circuit-wide in-service centres for mathematics teaching have been proposed as a target to be achieved gradually, 10 per region. Each centre is to be located in a school, to remain permanent for at least 10 years. Each centre will be equipped with the necessary mathematical instruments and library facilities, workshop tools and sufficient rooms for in-service work. Staff in each centre will be two Master Teachers each doing in-service work during weekends. Participants would come from a fixed number of schools in the circuit. The centre's programmes are to be so planned that they will not interfere with the normal school activities.

Regional Extension (In-Service Education) Centres will conduct courses of longer duration on a long-range basis.

THAILAND

General background

Educational development. The educational pattern consists, apart from pre-school or pre-primary classes, of elementary (primary) grades - Pratom: Junior I to IV, and Senior V to VII, which is free and gradually being made compulsory; and secondary grades - Maw Saw: Junior VIII to X and Senior XI and XII, for general education, and of varying duration for vocational education, depending on the nature of the vocation.

In teacher education there are several parallel programmes, each with various entry points. The system is so arranged that a person failing in one teacher training track may either drop back to another level within the same track or transfer to another track to progress toward a teacher certificate. The regular track is certification through institutional courses and training. These are the Certificate in Education - Paw Kaw Saw : 10 years of schooling plus two years of teacher training; the Higher Certificate in Education - Paw Kaw Saw Sung: 12 years of schooling or Paw Kaw Saw plus two years of training; degree-level certificate (B. Ed.): four-year course after Paw Kaw Saw, or two-year course after Paw Kaw Saw Sung; one-year post-graduate certificates, and master's degree programmes extending to two years.

There were 25 Teacher Training Colleges in 1971 offering both primary and lower secondary teacher training courses (Paw Kaw Saw and Paw Kaw Saw Sung). The College of Education - Prasarnmit - and some universities offer the degree courses for teaching upper secondary levels.

Recruitment policy. The Teachers' Association, or Teachers' Institute prescribes statutory qualifications in the

recruitment of teachers at the different levels of general education in consultation with the Ministry. To teach at the First Level, 12 years of schooling leading to a Certificate of Education, or two years after Grade X, are required. To teach at the Second Level, 14 years of schooling leading to a Higher Certificate in Education, or four years after Grade X, are required. At the Third, or University level, the qualifications for recruitment of teachers are fixed by the University Council for each category of its faculty members. The minimum qualification is a Bachelor's degree but a master's or a doctoral degree in an area of specialization is required in most cases.

Some untrained teachers are still appointed in schools, and there are about 50,000 such teachers. A large number of them are those who were appointed as teacher's aides. Security of tenure with the commensurate salary scale was assured to them if they qualified themselves for the posts held.

Organization of programmes for further education

The Khuru Sapha or Teachers' Institute of Thailand was created by the Teachers Act of 1945 to promote the status of the teaching profession, to safeguard teachers' interests and to provide assistance to the Ministry of Education in formulating general educational policy. The Minister of Education is Chairman of the Board, and the Under-Secretary of State for Education is Vice-Chairman.

Membership in this autonomous organization is compulsory for teachers in educational institutions under the control of the Ministry of Education. It advises the Ministry of Education on syllabuses, textbooks, training, examinations and other matters connected with education. Its functions include the provision of in-service education for teachers.

A special section of the Khuru Sapha is in charge of the in-service education at the national, provincial and local levels. The Department of Teacher Training is responsible for the examination and certification of teachers who go through these in-service courses. There are no separate

permanent centres of in-service training; the Teachers' Colleges, the College of Education, the Faculties of Education of the Universities serve as venues for in-service programmes.

A variety of programmes for the professional improvement of untrained teachers in service are made available by the Ministry of Education together with the Khuru Sapha. The 'Institute' has a short-term (three months) in-service programme (during the long holiday : approx. March-May), as well as a long-term (7 months) in-service programme (in the evenings and on Saturdays). The Department of Teacher Training administers the examination for both programmes at the end of the courses. Accumulation of courses taken leads to a Certificate in Education or Higher Certificate in Education.

For untrained teachers who cannot avail of the programmes offered, correspondence courses are available which enable them to prepare for the annual examinations given by the Department of Teacher Education and qualify as trained teachers. Teachers Colleges play an important role in providing in-service courses and organizing programmes for untrained teachers. Professional as well as general courses taken earn credits toward completion of the Certificate in Education, or higher level of education.

All programmes of further education are organized in such a way that trained teachers can improve their qualifications, acquire higher degrees and move from one level of education to a higher level.

New orientation to subjects in the curriculum is given through in-service and seminar courses. In addition, the recruitment of new teachers ensures that they have the required qualification for teaching a new course. Subject areas covered by in-service programmes vary according to the situation. Some or most of the programmes are graduated; that is, organized one-after-another. This helps toward attaining greater depth in learning or in the development of the required competencies in a major field of study.

There are at present few pilot projects organized for introducing new curriculum methods and techniques in the

schools. The demonstration schools attached to the College of Education serve as laboratories for trying out projects but these are localized and not statewide. The machinery for supervision serves as the main channel for the Introduction of new curricula and teaching methods into schools.

Types of in-service programmes

The types of in-service programmes organized and/or authorized by the Ministry, through the Teachers' Association Institute (Khuru Sapha) are given in Table 1.

Twilight courses which are similar in content and approach to the regular programmes are available not only to the untrained teachers but also to those employed in the government or private industries. In addition to the in-service programmes offered by the Teachers' Institute, other opportunities are open to the Thai teachers in service to further their education. Study leave is granted on official time to teachers to take full-time courses in education. It has been noted, however, that these opportunities are not fully utilized. Incentives are provided in the form of salary increments and higher pay scales, according to the certificates or diploma earned. Additional incentives in the form of per diems while attending courses and travel allowance are also available.

Six of the universities offer pre-service programmes in primary education, secondary education, administration, and other special subjects. These programmes are open to pre-service as well as in-service trainees. Of those who enrol for the Master's degree programme, 70 to 80 % are working teachers. A few categories of teachers are sent for higher training in the universities by the Government, while others gain admission on their own.

The National Education Association, a non-official professional association, occasionally organizes short courses of training in collaboration with the Chulalongkorn University for private school teachers. There are also Unesco supported seminars and workshops in which teachers and educators are

Table 1

	Twilight Courses	Correspondence Courses	Short and Long Courses	Seminars and Conferences
a) Venue: Teachers Colleges, Colleges of Education in Bangkok and in other cities and municipalities	All Colleges of Education	-	Teachers' Institute selects venue	-
b) Qualifications: Trained/untrained	Same as regular students	Everyone is eligible	Teachers' Institute prescribes qualification	-
c) Methods of selection: Examinations/ interviews, nomination by school heads	Recruitment exam. given by colleges and select participants	-	Prescribed criteria	-
d) Number admitted:	Slightly over regular courses	...		-
e) Incentives given:	None	None	-	Per diem, transportation allowance, official time
f) Qualifications of staff/resource persons: must be lecturers	Selected by TC generally B.A, B.Ed. with experience	None	-	-
g) Method of selection of resource persons:	Nomination by administrators	-	All lecturers of TC are involved	-
h) Credit or recognition given to those who complete the programme	Yes	Yes	Yes	No
i) Fees collected	Yes	Yes	Yes	No
j) How workload taken outside of teaching hours	Only in full time summer, the evening, Saturday	At any time	Summer or evening outside of teaching hours	

invited to participate. These serve as incentives for further advancement as they command high prestige and recognition by professional associations and agencies.

There are no radio or television programmes that cater especially to the further education of teachers, although there are educational radio programmes. A study is currently being made on the feasibility of Educational TV, as well as the use of video tapes for professional training in selected institutions.

In-service education for upgrading qualifications

The 'twilight courses' provide teacher training at all levels and are held in the evening, so that a teacher can qualify for all levels of teacher certification (including B.Ed.) through evening courses. It is possible for one who is unable to continue in an institutional teacher training programme to enrol in a twilight programme at one level and then return to an institutional course for the next higher level of certificate.

These courses were first established at the College of Education in 1955 for teachers in service. They are now so popular that they are offered in all branches of the College of Education and in most training schools; the enrolment far exceeds that of institutional courses. The Chulalongkorn University admits a large number of twilight students for B.Ed. and M.Ed. programmes.

The twilight courses are arranged as long-term or short-term courses, for both the Paw Kaw Saw and Paw Kaw Saw Sung. For the long course, teachers apply for admission to the Provincial Education Office, which nominates them for training. Students enrolled in the long course attend classes from August until February and take all academic courses offered to regular students. They are allowed to take about 20 credits a term (about four hours a day), and class hours are from 5 p.m. to 9 p.m. daily. For the Paw Kaw Saw level, five subjects are offered: Education, Thai language, Mathematics, Science and Social Studies. Six subjects are offered for the Paw Kaw Saw Sung level: Education

Thai language, Mathematics, Science, Social Studies and English. It will need 130 credit hours for Paw Kaw Saw or Paw Kaw Saw Sung. Examinations are held, and certificates are awarded to those who successfully complete the course.

Summer courses are offered for 'twilight' candidates preparing for both kinds of certificates. The Office of Academic Affairs in the Colleges is responsible for arranging for the courses. Admission is given to any teacher who passes an entrance test; the fee is only Baht 20 (US $1) per subject. Normally only one subject can be taken. The session runs from 19 March to 30 April. 36 hours of work may be covered in a week, working Saturdays and Sundays as well.

External certification is another track open to those who wish to become certified teachers or to upgrade their credentials. The Paw Maw is the first external certification. The Paw Maw may be earned by teachers solely through examination in professional education courses and in their choice of three elective academic areas. The Paw Kaw Saw certificate may also be earned through external examination. There are many applicants for this examination, but the rate of passing for General subjects (Education, Thai, English, Mathematics, Science, and Social Studies) averages less than 20%. The rate for Special subjects is higher: about 50%.

Further education for updating knowledge

Courses are offered periodically by the College of Education and the Teacher Training Department as well as the Teacher Training Colleges for introducing new methods and techniques of teaching; especially in New Mathematics and Science. Teachers who attend these courses are selected from the different elementary schools. Seminars, workshops and conferences are held on weekends or during vacations. Although no credits are earned, attendance is considered for promotions.

Extension courses are also held to help teachers develop new skills in the use of audio-visual aids and instructional procedures. The supervisors of the Teacher Training Department, in co-operation with the staff of the Teacher Training Colleges, conduct these courses.

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